

Military Family Housing O&M Costs Differences Among Services

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July 2001

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The views, opinions, and findings contained in this report are those of LMI and should not be construed as an official agency position, policy, or decision, unless so designated by other official documentation.

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Military Family Housing O&M Costs:
Differences Among Services

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Executive Summary

The four Military Services own about a quarter of a million family housing quarters in the Continental United States. Within age and size categories, most of this housing is similar or identical in design. The annual costs of operating and maintaining it, however, vary dramatically among the Services. In FY98, their housing operations and maintenance (O&M) costs ranged from \$4,979 per unit for the Marine Corps to \$9,745 per unit for the Navy. OSD asked LMI to review the causes of this disparity.

LMI met with representatives from OSD, the Services, and major command and claimant headquarters; made a detailed analysis of budget submittals covering a 10-year period; and visited 15 installations nominated by the Services that are representative of their housing inventories.

From these discussions and analyses, we eliminated five factors that had been identified as possible causes of the cost differences. We found no correlation between unit maintenance costs and the type of maintenance contract in use, the rate of occupancy turnover, the age of the units, or the units' condition on the basis of each Service's definition of unsatisfactory quarters. We also found no significant difference in the maintenance costs of Navy housing units located in coastal areas and those inland.

We identified eight factors that explain 62 percent of the O&M spending differences and eliminated seven others that had been suggested as causes. For each of the eight substantiated and quantifiable factors, we calculated a cost adjustment factor (CAF) that can be applied to the appropriate budget category of a Service's O&M spending to remove the effect of that factor. For example, a CAF of 0.6 can be applied to the Navy's maintenance spending because of its funding of a program to reduce its current maintenance backlog—a program that no other Service has funded.

We identified the following factors:

- ◆ *Area Costs.* Some Services have more installations in high-cost areas than others.
- ◆ *Maintenance surcharges.* Public Works Centers' surcharges are a maintenance cost driver resulting from policies that are unique to the Navy.
- ◆ *Incidental alterations and additions.* The Marine Corps and Air Force have specific policies for spending on these items. The Marine Corps does not allow them and the Air Force encourages them.
- ◆ *Backlog reduction.* The Navy is reducing its maintenance backlog partly through increased O&M spending. In the other Services, the backlogs are stable or increasing.
- ◆ *Utility rates.* Marine Corps installations charge their family housing accounts artificially high prices for housing utilities.
- ◆ *Headquarters and base staffing.* The ratio of housing units to full-time equivalent staffing varies widely among the Services.
- ◆ *Headquarters management charges.* Besides staffing costs, each Service has different policies on what headquarters management expenses it charges to its family housing account.
- ◆ *Fire and police services.* Air Force installations do not charge their family housing accounts for fire and police protection.

We also calculated an aggregate CAF for each Service that can be applied to total O&M spending to remove the total effects of the policy, environmental, and procedural factors that are causing some of the spending disparities.

In addition to the above factors that can be quantified and notionally eliminated by applying a CAF, we identified several other factors as likely causes that cannot be quantified. The biggest such factor is the priority each Service gives to its housing O&M funding requests. The Congress almost always appropriates all of the housing funds the Services request, and the Services always spend all of the housing funds appropriated. Therefore, if a Service's housing requirements are unfunded, it is because it has limited its request for housing funds in favor of other, non-housing priorities. (At the Service level, requests for housing funds compete with requests for non-housing funds.)

Another unquantifiable factor is the differences in each Service's maintenance standards. Higher maintenance standards will drive up maintenance costs. The Marine Corps, for example, spends the least on housing maintenance in part because of its "we can make do" philosophy, which is a source of pride, but also of lower standards. The cost effects of differing maintenance standards across the Services cannot be quantified unless the Services agree on a common standards baseline and a common methodology of measuring housing units against those standards.

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Chapter 1

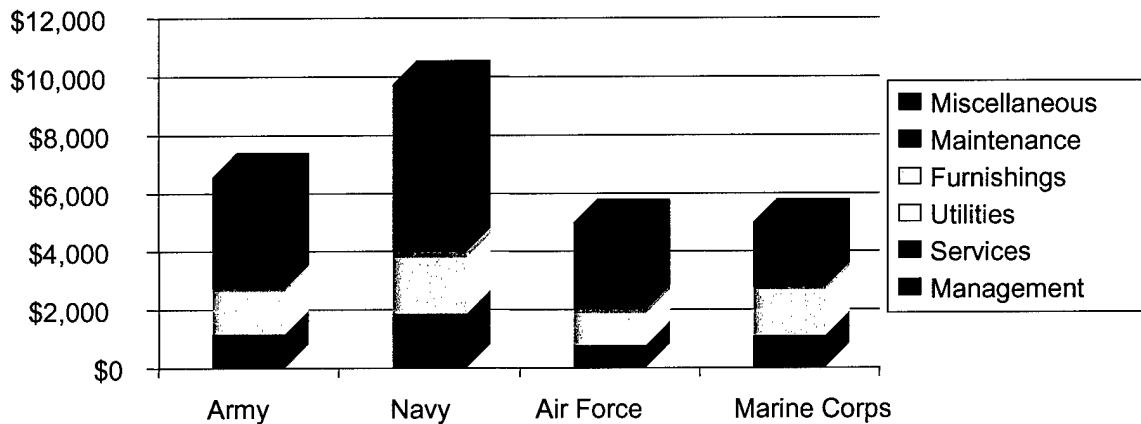
Introduction

The four Military Services own about a quarter of a million family housing quarters in the Continental United States (CONUS). Within age and size categories, most of this housing is similar or identical in design. The annual costs of operating and maintaining it, however, vary dramatically among the Services. In FY98, their housing operations and maintenance (O&M) costs ranged from \$4,979 per unit for the Marine Corps to \$9,745 per unit for the Navy. This report looks at the causes of this disparity.

BACKGROUND

Figure 1-1 shows how widely O&M spending per housing unit varied among the Services in FY98—in total and within the five budget categories that constitute the housing O&M budget: maintenance, utilities (purchased and generated), management, services (e.g., fire and police protection), and furnishings (primarily kitchen appliances).

Figure 1-1. FY98 O&M Expenditures by Category, CONUS (\$/Unit)



In FY98, the Services spent a total of about \$1.5 billion on O&M for CONUS housing units. Understanding how and where this money is spent will

- ◆ help in management of the programs,
- ◆ enable the OSD Housing and Energy Directorate to explain the differences in spending among the Services,

- ◆ facilitate joint Service discussions in the DoD Housing Policy Panel, and
- ◆ show each Service where the others' costs differ, making them aware of best practices.

This report identifies the major differences among the Services' O&M accounting, budgeting, and management practices for CONUS military housing and assesses the effects of those differences. It does not judge the wisdom or legality of, or need for, those practices; it merely catalogs them and quantifies their effects on spending.

ORGANIZATION

Chapter 2 lays the groundwork for the study: the study approach, the underlying assumptions and boundaries, and the data used. Each of the next five chapters analyzes one of the housing O&M budget categories: maintenance, utilities, management, services, and furniture, respectively. Chapter 8 summarizes the cost adjustment factors identified in the preceding chapters and addresses their cumulative effect on the total housing O&M spending for each service.

The appendixes contain the list of installations visited for this study and the definitions each Service uses for the categories that constitute the O&M budget.

Chapter 2

Analyzing O&M Costs

STUDY APPROACH

For this report, we analyzed historical budget requests, appropriations, and spending data by Service and met with Service, major command, major claimant, and Navy regional headquarters staffs. We also met with housing management staffs and visited housing units at 15 installations (Appendix A). These visits served to generate ideas on causes for the spending disparities and to confirm and provide examples of differences identified through interviews and data analysis. We also analyzed the cost data provided by each installation we visited.

Budget Categories

O&M costs for DoD housing fall into five budget categories. Table 2-1 shows their relative sizes. Well over half of housing O&M costs are for maintenance and utilities, so we spent most of the analytical effort on those two areas.

Table 2-1. Breakdown of O&M Costs for FY98

Budget category	Percentage of total O&M costs
Maintenance	44–59
Utilities	20–32
Management	10–12
Services (e.g., fire and police protection)	5–11
Furnishings and appliances	2

Our first task was to determine whether the definition of each category was the same across all Services. Differences in definitions could explain why some Services spend more in some budget categories and less in others. However, when we compared all of the official definitions (Appendix B), we found no significant differences.

We next examined each budget category in detail to determine the policy, environmental, and procedural factors that might cause some Services to spend

significantly more or less in a category than others. Across the 5 categories, we analyzed the effects of 15 such factors:¹

- ◆ Age of the quarters
- ◆ Area cost factors
- ◆ Backlog reduction
- ◆ Coastal maintenance effects
- ◆ Contract type
- ◆ Fire and police service charges
- ◆ Funding priority
- ◆ Headquarters support costs
- ◆ Housing turnover rates
- ◆ Incidental alterations and additions
- ◆ New or recently renovated inventory
- ◆ Maintenance surcharges
- ◆ Staffing levels
- ◆ Unsatisfactory quarters conditions
- ◆ Utility rates and subsidies.

We were able to substantiate significant effects on costs and to quantify them for 8 of the 15. These 8 factors account for about 62 percent of the spending differences among the Services. We suspected that several other factors influenced spending, but the data were not available or reliable enough to quantify their effects.

Cost Adjustment Factors

For each of the eight substantiated and quantifiable factors, we calculated a cost adjustment factor (CAF) that can be applied to the appropriate budget category of a Service's O&M spending to remove the effect of that factor. We also calculated an aggregate CAF for each Service that can be applied to total O&M spending to

¹ Housing managers at all levels and members of the DoD Housing Policy Panel identified these factors as potential causes of spending differences

normalize the total effects of the policy, environmental, and procedural factors that are causing some of the spending disparities.

The use of CAFs does not imply that the factors causing higher or lower O&M spending are good or bad. It is merely a device to illustrate the effect of these factors. When all of the CAFs are applied to a Service's O&M spending, the resultant notional dollar amount represents what that Service's spending would be if the differences between it and the other Services did not exist. The difference between these notional amounts and the actual spending for all Services illustrates how much of the disparity among the Services we have been able to explain and quantify.

ASSUMPTIONS AND BOUNDARIES

The study covers only military housing in CONUS, and, of that housing, it excludes housing requirement determination, historic quarters, leased housing, and the decision to replace or construct new housing. Throughout this report, the discussion proceeds with three underlying assumptions concerning historic quarters, sizes of quarters, and quality of the sample.

Historic Quarters

The first assumption is that the cost differences among the Services are not driven by large differences in the number of historic quarters that each Service owns. Historic quarters can be enormously expensive to maintain, and a large disparity in their numbers could affect the overall spending on housing O&M. However, members of the Housing Policy Panel agreed that the proportion of historic quarters among the Services is fairly uniform and any additional maintenance costs would be proportionally distributed.

Sizes of Quarters

The second assumption is that large differences in the sizes of quarters do not drive cost differences among the Services. Larger quarters cost more to heat and cool, and some maintenance costs, such as interior painting and recarpeting, are higher. All Services previously had to adhere to United States Code (U.S.C.) 10, Section 2826, which limited the net floor area of military family houses. The FY01 National Defense Authorization Act removed this limitation. We reviewed new housing construction for each Service as requested in the FY90–99 President's Budget submittals and calculated the average net square footage for each house size, determined by number of bedrooms. The results, listed in Table 2-2, show that the sizes of houses requested are very uniform. It is therefore safe to assume that the Services' existing inventories of housing are also uniform in size.

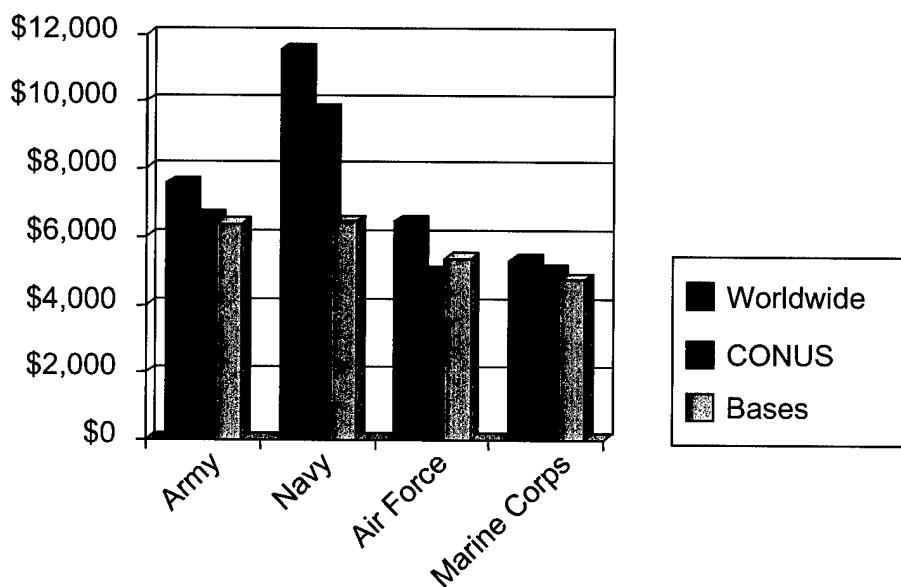
Table 2-2. Average Net Area (Square Feet)

Service	Number of bedrooms		
	One	Two	Three
Army	950	1,228	1,409
Navy	941	1,190	1,365
Air Force	950	1,227	1,420
Marine Corps	950	1,211	1,434

Quality of Sample

The third assumption is that the sample installations we visited fairly represent military housing in CONUS. The Services chose the installations visited (Appendix A) to include a range of base sizes, conditions of quarters, owning commands, and geographic locations. Figure 2-1 compares, by Service, unit costs for CONUS and for the installations we visited. The comparison is excellent for all Services except the Navy. The Navy was not able to explain the discrepancy.

Figure 2-1. FY98 O&M Expenditures (\$/Unit)



DATA USED

For comparison, Figure 2-1 also includes a bar for worldwide costs per unit. We sometimes had to use worldwide historical data since CONUS data were not separated for Services other than the Army. However, Figure 2-1 shows that the worldwide and CONUS costs per unit compare favorably for all Services, making the substitution acceptable.

The baseline year for our data is FY98, and any historical data used have been adjusted to FY98 dollars. The common measure for most of the comparisons we make is cost per unit in FY98 dollars, where “unit” refers to a single housing unit or set of quarters.

Chapter 3

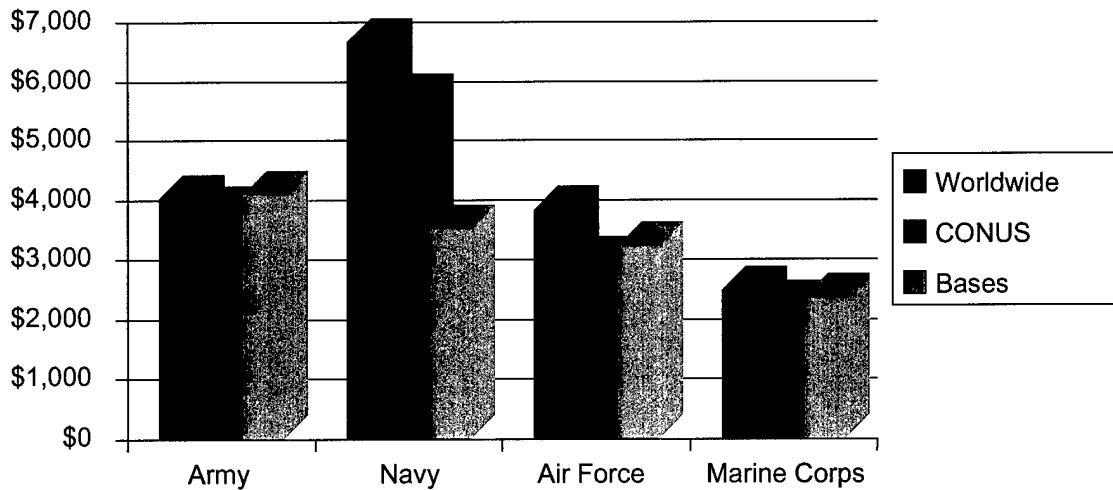
Maintenance

INTRODUCTION

The maintenance budget category comprises maintenance, repair, and incidental alterations and additions. The last two are minor improvements to a unit, such as a new security fence, generally performed while maintenance and repair work is being done on the quarters. The category excludes whole-house renovations, whereby the entire unit is gutted and rebuilt, and any project costing more than \$20,000 per unit.

The maintenance budget category is by far the biggest expense item in every Service's housing O&M budget. In FY98, it was 57 percent of the Army's budget, 59 percent for the Navy and Air Force, and 44 percent for the Marine Corps. Figure 3-1 compares FY98 maintenance spending per unit across the Services. It includes data for three populations: worldwide installations, CONUS installations, and our sample installations. The relative amounts of maintenance spending are the same for all three populations; with the exception of the low average unit maintenance costs for the Navy installations we visited. We could not explain the reason for this anomaly.

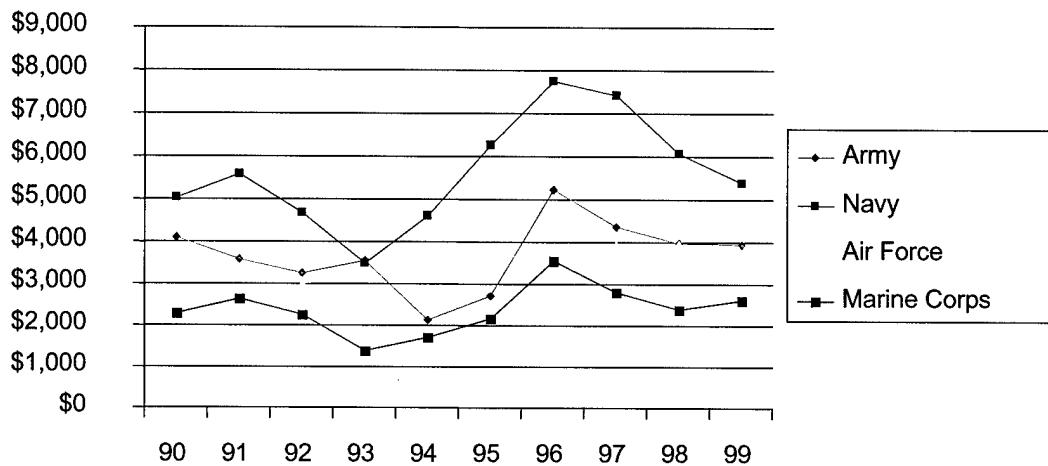
Figure 3-1. FY98 Maintenance Expenditures (\$/Unit)



Some aspects of the disparity in maintenance spending have been consistent for several years. Figure 3-2 shows the history of maintenance appropriations per unit, adjusted to FY98 dollars, from FY90 to FY99. We had to use worldwide,

rather than CONUS, data since the latter were not available until recently. The graphs show that the Air Force has a long history of stable and slightly rising maintenance funding and has avoided the 1-year emergency budget increase funded by the other Services in FY96. (That high spending was in response to criticism from the Marsh panel investigating DoD housing conditions.) The graphs also show that the Marine Corps funding is consistently below that of the other Services and that Navy funding has been considerably higher than the rest for some years.

Figure 3-2. Maintenance Funding Enacted, Worldwide (FY98 \$/Unit)



We identified four categories of possible causes for the spending disparity:

- ◆ Environmental factors
- ◆ Quarters condition and work requirements
- ◆ Management practices
- ◆ Service policies and priorities.

We looked at each to see if we could confirm and quantify the causes.

ENVIRONMENTAL FACTORS

Housing units are managed in various environments that are beyond local housing management's control but might affect maintenance costs. We looked at three such factors: area costs, coastal maintenance effects, and housing turnover rates.

Area Costs

The local cost of living affects each installation's housing maintenance costs. The Navy, for example, has installations mainly in metropolitan coastal areas where prices tend to be higher than those in rural areas. To compensate for these differences, we calculated a CAF for each Service as follows:

- ◆ We identified the zip code for each CONUS installation.
- ◆ We found the R.S. Means residential maintenance cost factor for each zip code. (We chose not to use the DoD construction cost inflation factors, which have been used in previous area cost analyses, because they pertain to construction, not maintenance.)
- ◆ We weighted the appropriate R.S. Means factor for each installation by the number of housing units at that installation, provided by each Service, and calculated an overall R.S. Means adjustment factor for each Service.
- ◆ We calculated an average R.S. Means factor for DoD.
- ◆ We calculated a CAF for each Service using the average DoD factor as a base. The resultant CAFs are Army, 1.02; Navy, 0.95; Air Force, 1.0; and Marine Corps, 1.03.

Coastal Maintenance Effects

It is commonly assumed that maintenance costs are higher in coastal regions than inland and that the coastal environment is harder on facility components. For example, salt air corrodes equipment more quickly than inland equipment and may reduce its economic life.

We took the FY98 housing maintenance costs for each Navy installation from the Navy's Family Housing Executive Management System. We then grouped those installations into coastal and inland installations and calculated the average maintenance cost per unit for each group. The coastal installations averaged \$4,607 per unit, while the inland ones averaged \$4,976, so we eliminated the coastal environment as a factor in high maintenance costs. If any correlation exists, it is so weak that it is well hidden by other factors.

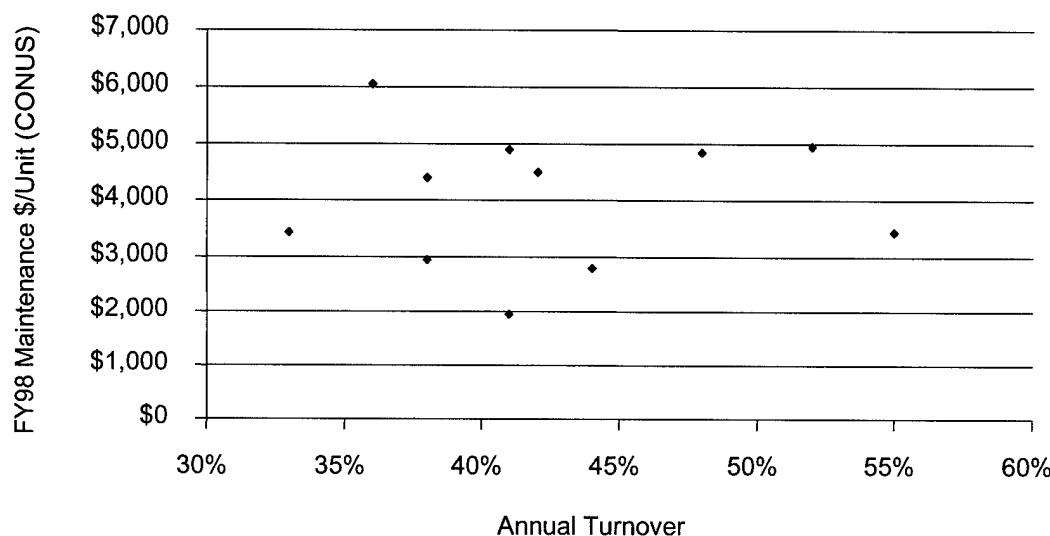
Housing Turnover Rates

Another common assumption is that an installation with high housing turnover rates will experience higher maintenance costs. The rationale is that change-of-occupancy maintenance, such as painting the quarters, will occur more frequently and drive up annual spending on maintenance. Our site visits cast doubt on that rationale, however. Housing managers stated that when quarters have been

occupied for less than a year (or, in some cases, less than 18 months), their change-of-occupancy maintenance is kept to a minimum.

For the installations we visited, housing turnover does not correlate with maintenance spending. Figure 3-3, which maps each installation's unit maintenance costs with its annual turnover percentage, illustrates this point. (The figure includes only 11 of the 15 installations we visited because the remaining 3 could not provide turnover rate data.) We eliminated housing turnover rate as a factor in disparate maintenance costs.

Figure 3-3. Turnover Factor (Adjusted for Area Cost Factor)



QUARTERS CONDITION AND WORK REQUIREMENTS

The condition of housing units indicates how well they are maintained, which, by extension, usually indicates the amount of money spent on their maintenance. (In theory, a more efficient maintenance program could maintain units better at lower costs.) Similarly, a large backlog of work requirements indicates that less money has been spent on the quarters, causing needed work to go undone. Thus, a Service's unusually high or low maintenance spending could be due to much higher or lower maintenance standards. A high maintenance spending rate could also be the result of a policy decision to bring poorly maintained quarters up to standard.

Exploring these connections is difficult because no common maintenance standards span the Services or even any one Service. Local management usually decides how often a unit gets painted or has its carpet replaced. The quarters we visited are too small a sample to show that one or another Service has better maintained quarters. We heard anecdotes from all Services that Air Force housing was maintained to higher standards, but we could not confirm that from our visual inspections. Instead, we looked at three measures of quarters condition to see if

they could be related to maintenance spending: the percentage of inadequate (i.e., poorly maintained) quarters, average age of the housing inventories, and percentage of the inventories that are new or recently renovated.

Unsatisfactory Quarters

Each Service keeps track of how many of its quarters are inadequate. The term "inadequate" does not mean substandard in the legal sense.¹ Inadequate quarters are simply not up to the standards that the Service wants to maintain.

The Navy and Marine Corps have a simple definition for an inadequate housing unit. It is one that has a backlog of work of \$15,000 or more. The Navy estimates that 40 percent of its inventory meets that criterion and the Marine Corps, 44 percent.

The Air Force has a numerical system for rating its quarters condition. Quarters are inspected using a checklist of 118 factors. Each is rated on a five-point scale, and when the average score is 3.75 or less, the quarters are deemed inadequate. About 62 percent of the Air Force inventory falls into this category.

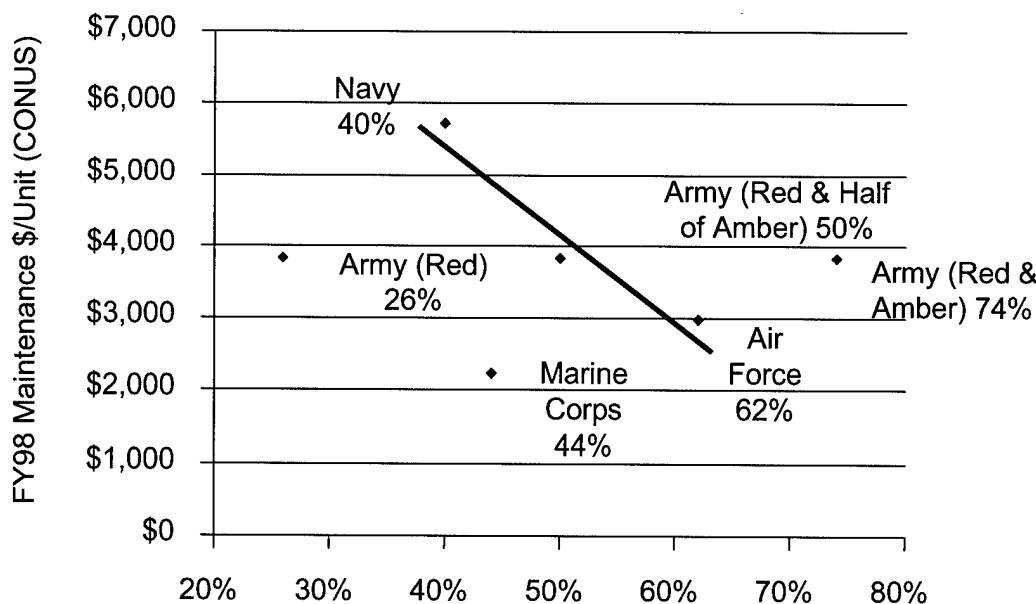
The Army has a three-color code system for rating its quarters condition, which is difficult to compare with the other Services' binary systems. About 26 percent of the Army's inventory is rated red—definitely inadequate under the definitions of the other Services. Another 48 percent is rated amber or marginal. Some of these would be rated inadequate by the other Services; the rest would be rated satisfactory. If we say that about half of the amber-rated quarters would be rated inadequate by the other Services, then 50 percent of the Army's inventory would fall into this new, binary-system definition of inadequate.

Figure 3-4 relates each Service's percentage of inadequate units with its maintenance spending. The Army, Navy, and Air Force correlate as would be expected. The Navy, with the highest maintenance spending, has the lowest percentage of inadequate units. The Army, using the new binary definition, is in the middle of both measures, and the Air Force, with the lowest maintenance spending rate, has the highest percentage of inadequate units.

When we introduce the Marine Corps, however, the correlation breaks down. It has the lowest spending rate but one of the lowest percentages of inadequate units. This means that either it has an extremely cost-efficient maintenance program or a higher tolerance of poor maintenance conditions. From our site visits, we judge the latter to be the case. Managers at Marine Corps installations operate under a "we can make do" philosophy of housing maintenance, which is seen as a source of pride.

¹ Substandard quarters are those in such poor condition that their occupants do not have to forfeit all of their basic allowance for housing. Such quarters in CONUS are rare.

Figure 3-4. Percentage of Inadequate Inventory and Maintenance Spending



Also, our visual inspections of the housing at the installations we visited did not confirm that significantly more Air Force housing than Army and Navy housing is inadequate. We therefore conclude that the apparent correlation between the level of maintenance spending and the percentage of inadequate inventory is not strong enough to merit a CAF. The relationship cannot be proven unless the Services adopt common maintenance standards and a common methodology of measuring a unit's condition against those standards.

Age

We next looked at age as a possible indicator of quarters condition with the thought of comparing the average age of each Service's inventory with its level of maintenance spending. However, the average age of CONUS units is 36 years for the Army, Air Force, and Marine Corps and 32 years for the Navy. With so little variation in age, we cannot say that it affects maintenance spending.

New or Recently Renovated Inventory

When a unit is whole-house renovated, it is almost like acquiring a new unit, so age alone is not a good measure of quarters condition. A better measure is the percentage of inventory that is new or has been recently whole-house renovated.² For each year between FY90 and FY99, we looked at the percentage of each

² We define "new" or "recently renovated" units as those that have been built or whole-house renovated within the last 10 years.

Service's inventory that had been built or whole-house renovated within the previous 10 years. Figure 3-5 graphs that rolling measure over the 10-year period.

Figure 3-5. Percentage of New/Renovated Housing

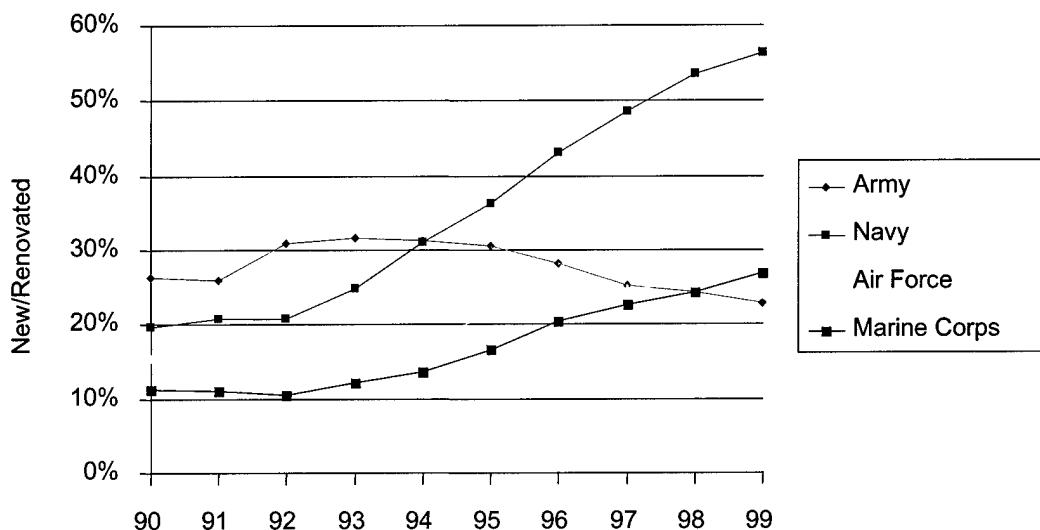


Figure 3-5 reflects the Navy's policy of upgrading the condition of its inventory. Starting in FY92, it began an aggressive program of new construction and whole-house renovations. However, we cannot conclude that the Navy's housing inventory is newer or of better quality than that of the other Services, which would affect the Navy's annual maintenance spending. When the program started, quality was well below acceptable standards.

The other Services acknowledge the huge Navy investment in its housing, and the general sense is that the condition of its inventory is now at least on par with theirs. We cannot confirm this sense because of the lack of common standards and inspection methods among the Services. The percentage of new and recently renovated housing for the other Services is almost identical. If we assume that the Navy is now on par with them, we must conclude that the age and renovation factor does not explain any differences in maintenance spending.

Conclusion

We conclude that quarters condition cannot be used to explain differences in maintenance spending. There is no direct method of comparing quarters conditions—i.e., common inspections using common standards—and the three indirect methods we used did not show a correlation between condition and maintenance spending.

MANAGEMENT PRACTICES

Maintenance Surcharges

The practice at Navy Public Works Centers (PWCs) is to place a surcharge on the maintenance work they do for family housing and their other customers. That surcharge is 14 percent at Norfolk, 14.5 percent at San Diego, and 10.8 percent at Pensacola. The surcharge is used to offset the general and administrative costs of the PWC and the cost of quality assurance.

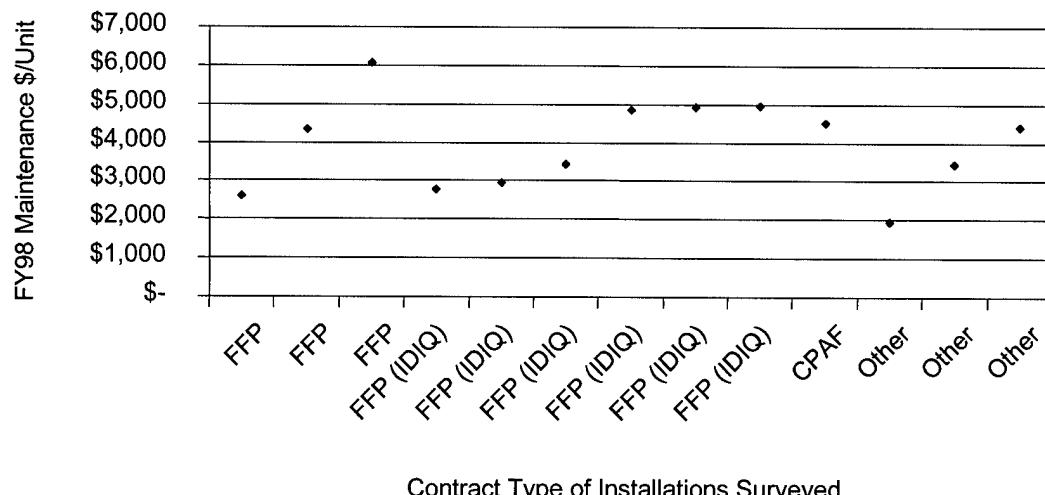
The other Services have no such common practice, although it is a local policy at a few locations. The Navy's average PWC surcharge is about 10 percent. We therefore established a CAF of 0.9 to be applied to Navy unit maintenance costs.

Contract Type

It has long been an axiom in the procurement community that firm fixed-price (FFP) contracts are the most cost-effective for the government, although we have never found any studies that confirm this. Thus, another potential candidate for a CAF is the type of maintenance contract or in-house work force that predominates in each Service. At the installations we visited, almost all of the maintenance work was contracted. The contract types included FFP, cost plus award fee, and FFP with an indefinite delivery/indefinite quantity component.

Figure 3-6 maps the contract type used by each installation we visited with the installation's unit maintenance cost, showing no correlation. Therefore, the contract type does not explain the differences in maintenance costs.

Figure 3-6. FY98 Contract Type and Unit Maintenance Cost (\$/Unit)



Note: The "other" category refers to a primarily in-house work force or a mixture of maintenance contracts with no type predominating.

POLICIES AND PRIORITIES

Services' policies and priorities are the fourth category of possible causes for the disparities in maintenance spending. We analyzed three such possibilities: the Navy's policy of backlog reduction, policies on the use of incidental alterations and additions, and the priority given to housing O&M funding.

Navy Backlog Reduction Program

Since FY92, the Navy has steadily improved the condition of its housing inventory. Part of this effort is the aggressive construction and whole-house renovation program discussed previously. Another aspect, begun in FY94, is a policy of reducing the backlog of maintenance and repair by increasing maintenance funds. According to the other Services, their work backlog has been stable or slightly increasing. We therefore need to quantify how much the unique work backlog reduction policy explains the Navy's high maintenance spending.

Since the Services no longer have formal programs to track the sizes of their work backlogs, measuring the amount of backlog reduction is not easy. For this study, the Navy headquarters housing staff analyzed spending patterns in FY98 and found that about 43 percent of that year's maintenance spending was applied to backlog reduction. We confirmed the approximate size of that ratio by comparing the average spending in the 5 years the policy has been in effect (FY94 to FY98) with the average spending of the previous 5 years (FY89 to FY93).

Using FY98 dollars, we found that the average spending with the policy is 40 percent higher than the years without it. We therefore conclude that, conservatively, 40 percent of the Navy's maintenance spending is for backlog reduction. A CAF of 0.6 is thus justified to eliminate the effects of the backlog reduction policy.

Incidental Alterations And Additions

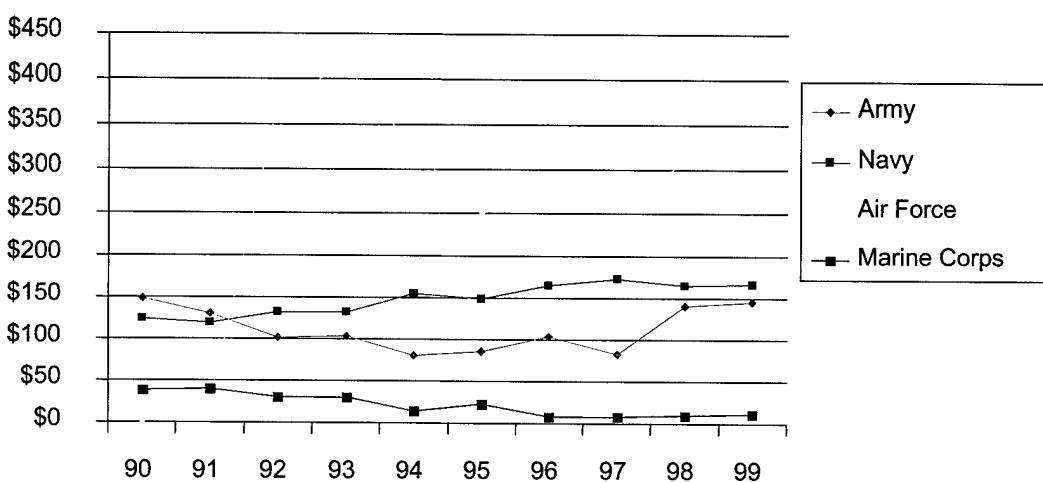
Some minor alterations and additions may be funded with maintenance money when they are incidental to the maintenance and repair performed in a housing unit. The Air Force and Marine Corps have specific policies on alterations and additions that affect their levels of maintenance spending.

The Air Force has found that low-cost changes to housing units are often highly satisfying for the occupants. Hence, they consistently pay for small modifications from the maintenance budget. Examples include changing kitchen counters to accommodate newer style appliances, enhancing privacy fencing, adding trash can enclosures to car ports, and adding shelving to laundry rooms and exhaust fans to bathrooms. The Air Force has made much greater use of this provision than have the other Services, although they limit such work to \$3,000 per CONUS unit.

The Marine Corps has the opposite policy. Because of the scarcity of maintenance funds, it discourages incidental alterations and additions, and almost no such work is done. The Army and Navy place no particular emphasis either way, and their spending per unit on this type of work is closely matched.

Figure 3-7 shows the maintenance dollars that each Service spent on incidental alterations and additions. The Marine Corps spending is almost zero, while the Air Force has spent the most by a wide margin for 8 years. The Army and Navy are together in the middle. We can therefore calculate CAFs to compensate for the effects of the Air Force and Marine Corps policies in this area.

Figure 3-7. Expenditures on Alterations/Additions, Worldwide (\$/Unit)



When we eliminate the early years of wild Air Force fluctuations, we have 6 years (FY94 to FY99) of fairly stable funding history. Taking as the baseline the average Army and Navy funding over those years, we could notionally adjust maintenance spending of the other two Services to eliminate the effects of their policies by applying CAFs of 0.96 and 1.02 to the Air Force and Marine Corps maintenance line items, respectively.

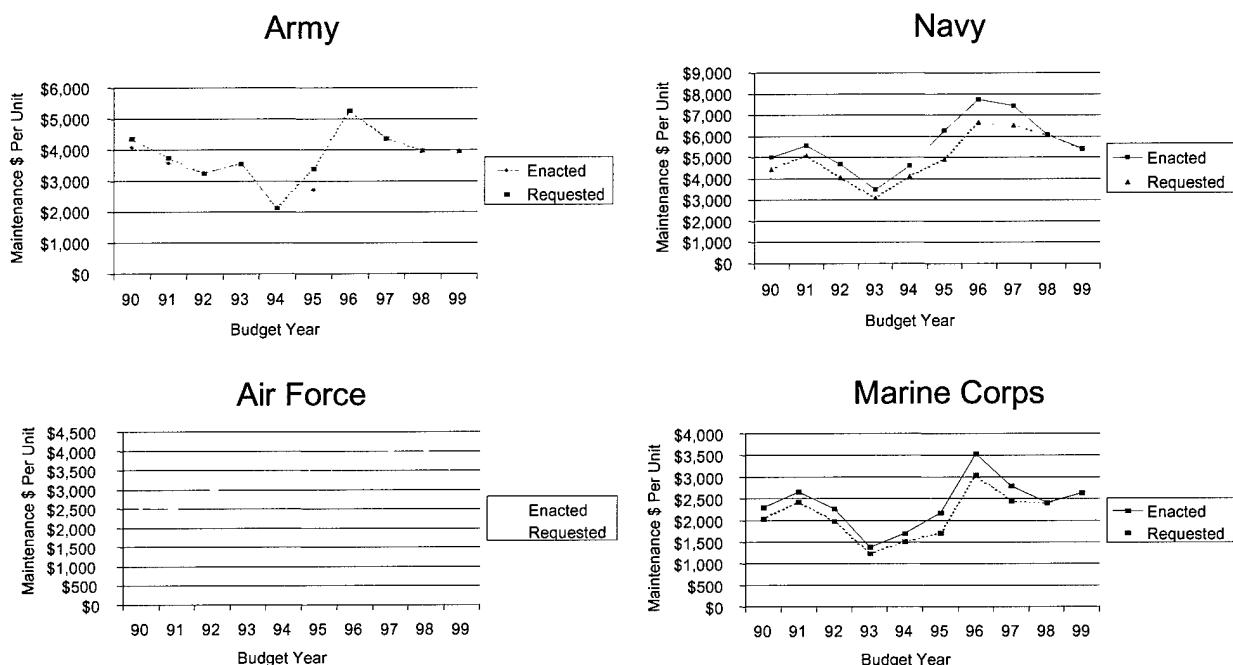
Funding Priority

Maintenance is the budget category that is most affected by Service policies that affect the level of O&M spending. Managers at all levels regard the utilities, management, and Services categories more as costs that must be met. It is difficult, for example, to cut funds that pay for utilities. Maintenance, on the other hand, is seen more as a variable cost. Any O&M budget cuts or tight money policies are more than likely to be applied to maintenance. We therefore looked at policies that affect O&M budgets to explain why maintenance spending varies so widely.

First, we found that insufficient housing O&M budgets were self-imposed by the Services and not the result of a lack of congressional support. Figure 3-8

compares the worldwide housing O&M funds requested by the Services with the budgets enacted by Congress in FY98 dollars for FY90 to FY99. The Congress has never failed to honor all of the Services' housing O&M requests and, in some cases, has even appropriated more than that requested.

*Figure 3-8. Funds Requested versus Budgeted
(Worldwide, FY98 Maintenance \$/Unit)*



We found mechanisms at work on three levels to constrain the amount of housing O&M funds requested from Congress: Service, housing headquarters, and installation.

SERVICE

Services may not fully fund housing maintenance requirements in their budget requests because, at the Service level, housing funds compete with other budget priorities. A Service headquarters may therefore reduce its housing office's request for O&M funds because it gives higher priority to non-housing requirements.

It was the consensus of the Services' housing headquarters that the priority each Service gives to housing O&M funding varies dramatically. Air Force housing O&M funding has consistently fared well against other Air Force priorities for many years. The Navy has given a far higher priority to its housing O&M funds in recent years since its fleet commanders lobbied for that change. The Army's priorities are somewhere in the middle, and the Marine Corps has traditionally given

a far lower priority to housing funds, preferring to funnel most of its resources into core mission requirements or unaccompanied housing improvements.

HOUSING HEADQUARTERS

Faced with a history of reduced budgets, Service housing offices introduced policies to constrain the statement of requirements in the belief that it is counterproductive to continually request more funds than are likely to be funded. For example, the Army and Marine Corps have de-emphasized maintenance spending for housing pending privatization. This lack of emphasis has frustrated managers at the installations because they have real housing maintenance needs, and they believe that privatization may be years away, if ever. The Marine Corps also reduces maintenance spending on those houses for which major renovation projects have been requested, even though many of those projects may slip for several years.

Other constraints are built into the budget process. The Army gives its major Army commands (MACOMs) “fiscal guidance” on what housing funds to ask for and the MACOMs may suballocate to its subordinate installations the budget allowed within that guidance. Similarly, the Navy gives a “control number” by budget category to each of its Engineering Field Divisions (EFDs); an Air Force base’s budget is limited to the “bogie” it is given; and each Marine Corps base programs by “core ceiling.” In most cases, installations may still identify requirements that exceed the budget constraints that they have been given so that they can be documented as unfunded needs. However, these documented shortfalls rarely affect the Services’ ultimate budget allocation decisions.

INSTALLATION

Finally, at the installation level, housing managers may not put much effort into identifying requirements since they do not expect them to be funded. Managers see little advantage in identifying needs beyond their budget constraints, even though those needs would be included on an unfunded list. Low expectations of funding become a self-imposed constraint.

In general, at the installations we visited, we found that Air Force and Navy expectations of funding are high. Army expectations are somewhat lower, and Marine Corps expectations are very low. Marine Corps housing managers, especially, are used to making do.

CONCLUSIONS

From the preceding discussion, we draw two conclusions:

- ◆ The Services get the housing funds they ask for from Congress.
- ◆ The Services’ broad policies and priorities, rather than their real housing O&M needs, determine what they request.

MAINTENANCE SUMMARY

We looked at 11 factors that were identified as possible causes for the disparities in housing maintenance spending among the Services:

- ◆ Environmental factors

The location of Navy and Marine Corps installations in high-cost areas of the country is a factor in their maintenance spending.

The location of many Navy installations in coastal areas is not a factor. No significant difference exists between the unit maintenance cost of inland and coastal locations.

The turnover rate of housing quarters is not a factor. An installation's turnover rate does not correlate with its unit maintenance cost.

- ◆ Maintenance standards and work requirements

The amount of each Service's maintenance spending does not correlate well with the percentage of its inadequate housing inventory. However, the lack of correlation may well be due to the wide differences in the Services' definitions of an inadequate housing unit and in how they measure a unit's condition.

Age of quarters is not a major cause of the spending differences since the average ages of the Services' inventories are very close.

The percentage of inventory that is new or recently renovated does not explain the spending variations. The percentages for all Services but the Navy are almost identical. The Navy has the newest or most recently renovated inventory but still has the highest maintenance spending.

- ◆ Management practices

The Navy's management practice of applying PWC surcharges to the price of maintenance helps to explain its relatively high maintenance costs.

The types of contracts that installations use for housing maintenance do not correlate with the cost of maintenance.

- ◆ Policies and priorities

The Navy's backlog reduction program has been a major factor in its high maintenance spending.

The Air Force's policy on incidental alterations and additions affects its maintenance spending compared with the other Services. Air Force maintenance spending is the second lowest among the Services and, without this factor, its maintenance spending would be even lower. Although the factor does not help to explain why Air Force spending is so low, we must include it since it is a clear policy difference that potentially affects spending.

The priority given to funding housing O&M affects the maintenance budget category more than the other categories. This priority plays a role in maintenance spending on three levels: Service headquarters, housing headquarters, and installation. Although its effects cannot be quantified, it is probably the most important factor that, in different ways, keeps Marine Corps and Air Force maintenance spending low.

- The Air Force has consistently given high priority to housing O&M requirements for at least 10 years. Although not always the best funded, its maintenance funding has been steadily increasing. The Air Force has not had to initiate inefficient and costly programs to periodically redress years of maintenance neglect, as have the other Services. This consistency has allowed an efficient, and well-planned and executed, maintenance program, which has kept maintenance quality high and costs low.
- The relatively low priority that the Marine Corps has given to its housing O&M requirements has constrained funding and hence spending. The Corps has adopted a "we can make do" philosophy at all levels.

Chapter 4

Utilities

INTRODUCTION

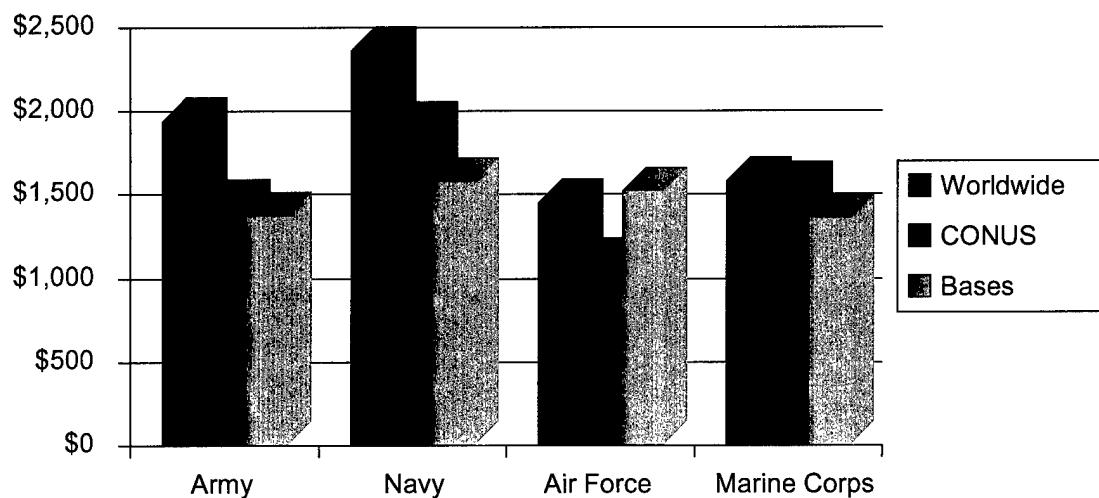
The O&M utilities budget category includes the costs of purchased utilities in family housing and supporting activities, such as

- ◆ electricity procured or generated for consumption within family housing;
- ◆ gas-fired (natural, manufactured, liquefied petroleum gas, etc.) heating plants for the production of steam, hot water, hot air, and heat for cooking in family housing;
- ◆ water procured or provided for consumption in family housing; and
- ◆ sewage disposal for family housing.

Separately billed connection, facility, or other charges amortizing construction costs are recorded in the utilities account.

In FY98, the actual CONUS cost per unit for utilities ranged from \$1,102 for the Air Force to \$1,920 for the Navy, as shown in Figure 4-1. The installations we visited followed the same spread, with the exception of the Air Force installations.

Figure 4-1. FY98 Utilities Expenditures (\$/Unit)



FINDINGS

The utilities budget category for all Services includes purchased utilities. However, we found differences in the consistency of the application of utility construction amortization costs across installations. Some installations included amortized utility construction costs in the utility rate structure, while others included these costs as a separate cost item within the utilities account. Finally, some installations did not charge the family housing utilities account for utility construction, charging the base O&M account instead. This inconsistency raises questions regarding the validity of installation- and Service-wide comparisons of cost of purchased utilities.

In addition, the utility cost and consumption data reported by the Army is unrealistically low. The annual cost of its reported energy consumption in FY98 averages only \$115 per unit. For this reason, although we provide Army data in our charts to illustrate the data-reporting problem, we did not include a comparison of the Army in our analysis.

Energy Consumption

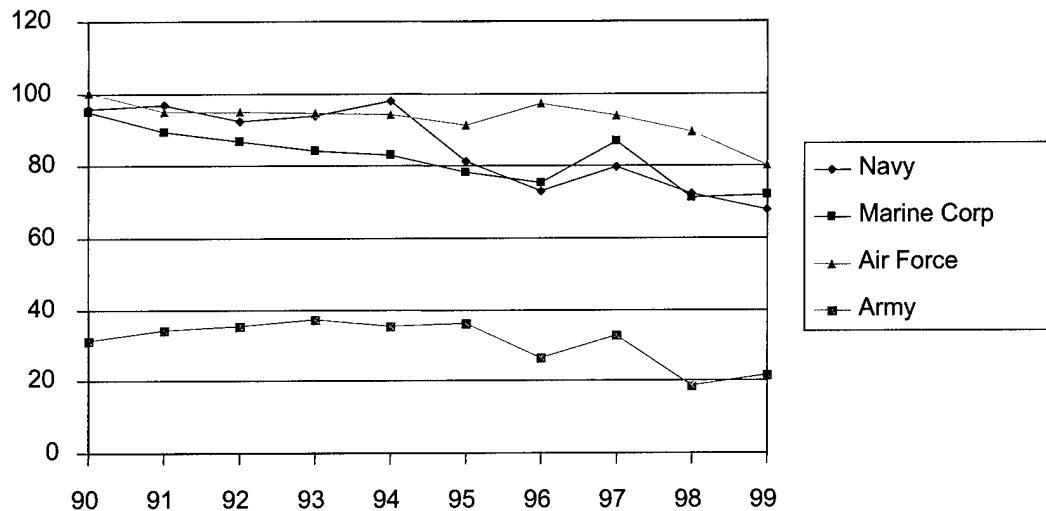
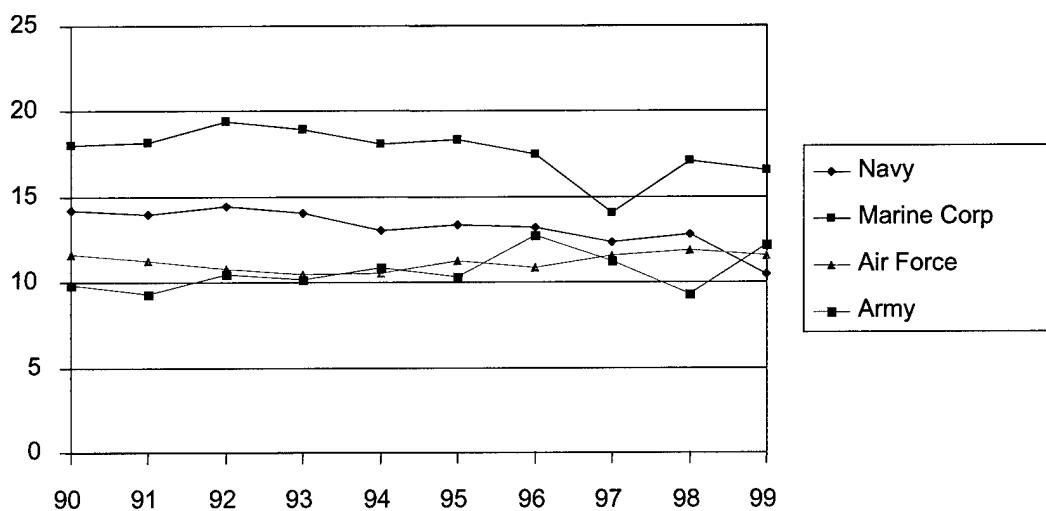
Since 1990, the Services have reduced their energy consumption by 25 to 42 percent. This decline stems from the implementation of energy programs that focused on replacement of windows, better insulation, and replacement of water heaters and household appliances with newer, more efficient models. During the same period, U.S. residential and commercial energy consumption has increased 16 percent.¹ This improvement in Service-wide consumption relative to the U.S. residential and commercial sector is likely due to steady improvements in service from a higher consumption base than that for national levels. Figure 4-2 shows Service energy consumption histories in million British thermal units (MBtu) per housing unit.

Energy Costs

Following energy consumption's downward trend since 1990, purchased utility costs reported in cost/MBtu have also decreased. (See Figure 4-3.) The Air Force trimmed its MBtu costs by 1 percent and the Marine Corps by 9 percent. The Navy demonstrated a substantial 36 percent decrease in cost/MBtu nationwide. Total consumer expenditure estimates for energy from 1990 to 1997 (the last year that data were available) declined 1 percent due to the combined effects of lower energy costs and consumption.² Figure 4-3 shows, however, that the costs per MBtu for the Marine Corps are far higher than those for the other Services.

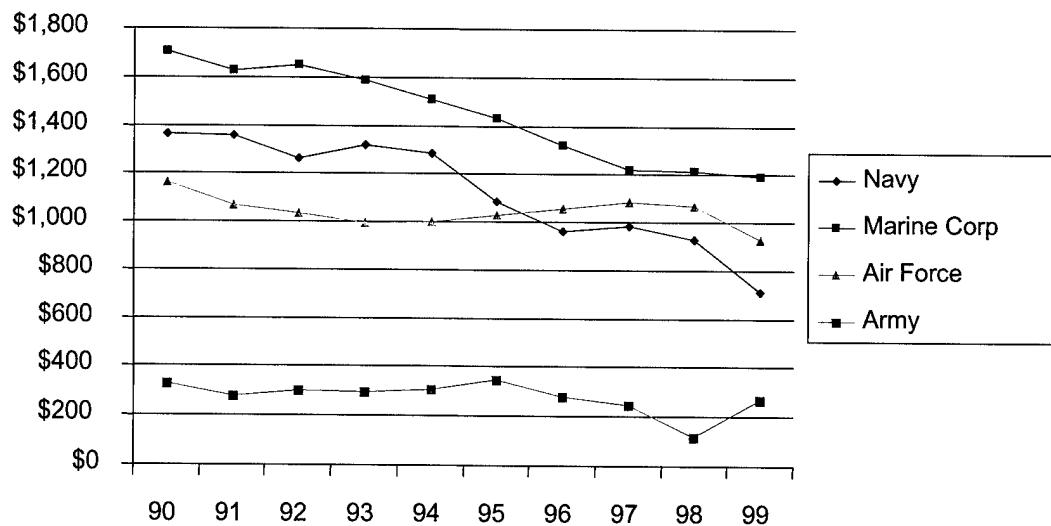
¹ U.S. Department of Energy, Energy Information Administration, "Energy Consumption by End-Use Sector, 1949–1999," *Annual Energy Review*, 2000.

² U.S. Department of Energy, Energy Information Administration, "Consumer Expenditure Estimates for Energy, 1970–1997," *Annual Energy Review*, 2000.

Figure 4-2. Energy Consumption (MBtu/Unit)*Figure 4-3. Purchased Utilities Cost/MBtu (FY98 \$)*

Together, the reductions in MBtu/unit and cost/MBtu have resulted in a significant and steady decrease in purchased utilities on a cost/unit basis. (See Figure 4-4.)

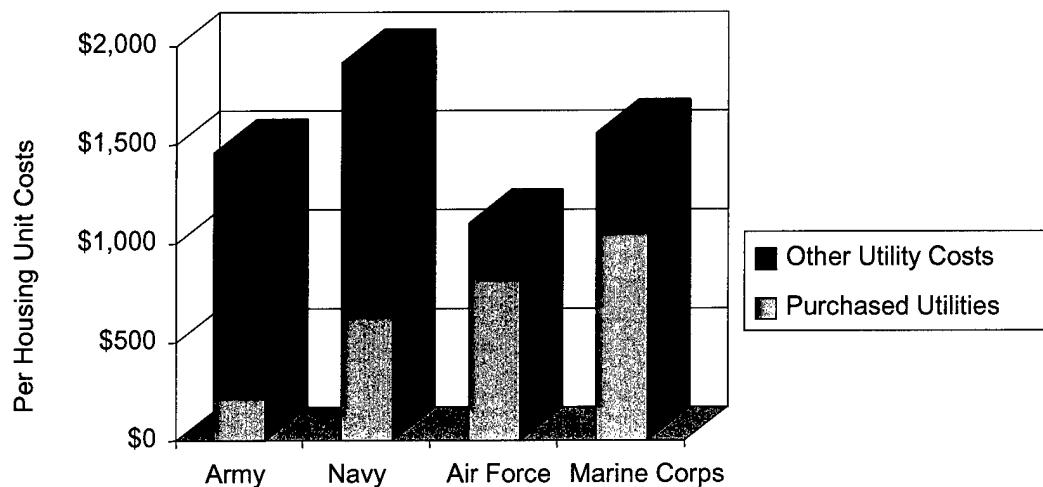
Figure 4-4. Purchased Utilities Cost/Unit (FY98 \$)



Utility Data Underreporting

Further compounding the data-reporting problem is a comparison of the purchased utility costs reported by the Services to the utility expenditure line item reported by OSD. Figure 4-5 presents the disparity in reported costs. The Army's reported purchased utility costs, for example, represent only 15 percent of the total utility line item reported by OSD.³ The Navy, Air Force, and Marine Corps purchased utilities represent 33 percent, 74 percent, and 67 percent, respectively, of the total utilities budget category item. The lack of water and sewage data collected in the utility reports and inconsistency in the application of construction amortization costs in utility rates account for only a small portion of the differences in the reported figures.

³ The Army's underreporting is so egregious, we omitted its data from our analysis of the causes of the differences in utility costs.

Figure 4-5. Underreporting of Purchased Utilities Costs

CAUSES OF THE DIFFERENCES IN UTILITY COSTS

We analyzed the reported energy data and the findings from our site visits to determine the causes of the differences in utility spending among the Services. We found that the O&M budget priorities (discussed in Chapter 3) do not directly affect utility spending. All Services have worked hard to reduce utility costs to help reduce O&M spending, but when the O&M budget is cut, the cuts are unlikely to come from the utility budget category. Keeping the houses heated and cooled and supplied with running water is a universal priority. Also, consumption differences do not explain the cost differences. Figure 4-2 shows that unit consumption among the Services is about the same, with the exception of the Army. The Army's consumption data are not credible and its energy managers agree that consumption is seriously underreported.

Some of the differences in utility costs are probably due to the locations of each Service's installations. Utility costs vary dramatically from place to place. However, unlike for facility maintenance and repair costs, there are no reliable adjustment factors for utility costs based on geographic areas, such as zip codes or counties. In many cases, free market pricing has led to wide cost differences between adjacent towns. We therefore could not calculate a geographic CAF for utility costs as we did for maintenance costs (see Chapter 3).

Another probable cause of the reported cost differences is the inaccuracy of the data. As presented above, the data in the Services' energy reporting systems do not match the total roll-up figures reported by Service headquarters in their budget submittals. Although we can account for some of these differences, there are problems in the collection of the utility consumption and cost data at the installation level.

The biggest cause of the cost differences is probably the Services' policies on pricing housing utilities and applying surcharges. Marine Corps installations charge higher prices for the utilities they supply to the housing areas than they do to other base consumers. For example, the Marine Corps Headquarters Housing Office asked Camp Pendleton to reduce its utility charges to family housing and bring them more in line with what utilities actually cost the base. Camp Pendleton refused.

Pricing policies result in significantly higher MBtu costs and, hence, utility costs per housing unit. These policies justify a CAF for the Marine Corps to account for their effects. This CAF (0.82) is based on the average cost per unit for the Navy and Air Force divided by the actual cost per unit for the Marine Corps. (Army data are not reliable enough to be used in the calculation.)

Chapter 5

Management

INTRODUCTION

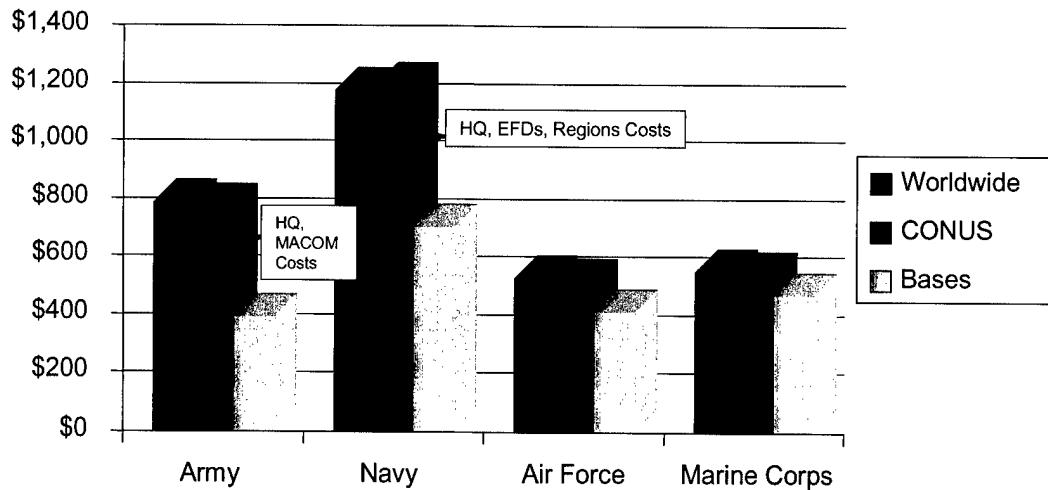
The management budget category is the third largest budget category in housing O&M, amounting to 10 to 12 percent of spending. It provides the resources for the general administration and physical operation of the family housing program. Its major cost elements are as follows:

- ◆ Direct family housing administration and management costs at the installations, including labor, supplies, equipment, travel, training, surveys, studies, planning, and housing referral
- ◆ Indirect administrative support services costs at the installation level, including the administrative support provided by other installation functions such as base engineering, comptroller, legal office, supply, and automated data processing (ADP)
- ◆ Indirect administrative support services costs at the Service headquarters and MACOM or claimant levels, including labor, studies, equipment, and travel.

In FY98, the actual worldwide per unit cost for management ranged from \$1,175 to \$525 across the four Services. As shown in Figure 5-1, the Navy had the highest management per unit cost and the Air Force, the lowest. The figure also shows that for each Service worldwide and CONUS per unit costs were almost identical. Air Force and Marine Corps installation costs are also relatively close to their respective worldwide and CONUS values. However, the Army and Navy expenditures, for the installations we visited, amount to only 50 percent and 59 percent, respectively, of the CONUS figures.

The majority of the difference in Army and Navy CONUS and installation per unit cost stems from the large expenditures for staff and support commitments at the headquarters, EFD, and MACOM levels before the funds are distributed to the installations. Although the Services were unable to provide an exact breakdown of management costs into headquarters and installation spending (it is not a reporting requirement), Figure 5-1 indicates an estimated per unit cost for Army and Navy headquarters management costs based on available data.

Figure 5-1. FY98 Management Expenditures (\$/Unit)

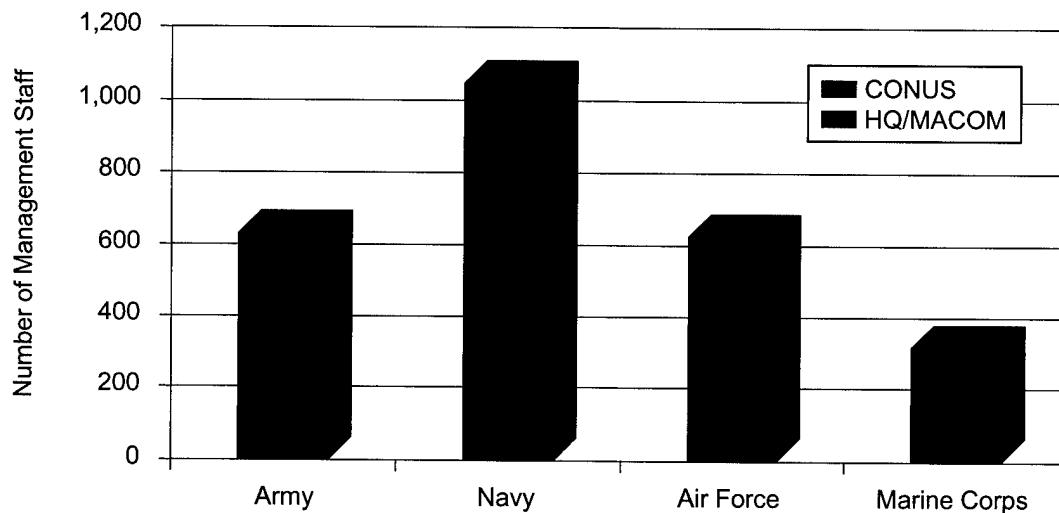


In the sections below, we examine this headquarters spending and other possible reasons for the Services' different management per unit costs.

STAFFING LEVELS

The number of full-time equivalent (FTE) positions funded from housing O&M funds in the various housing functions accounts for the majority of the management costs per unit. While the Army and Air Force have about the same number of housing-funded FTEs (around 630), the Navy has about 1,050 and the Marine Corps, 320. Figure 5-2 compares total management housing-funded staffing. The Army and Air Force operate with about the same average installation-level FTEs per installation with 8 and 10, respectively. The Navy and Marine Corps also average about the same (but at a much higher level) with 19 and 18, respectively.

Figure 5-2. Total Management Staffing



Total staffing is not a fair comparison, however. A Service with significantly more housing units to manage would logically need a larger staff to manage them, but the per unit cost should be about the same unless other factors are involved. Comparing the number of CONUS units per housing-funded management FTE indicates that the Army and Air Force are close, with 120 and 127 units, respectively, per management FTE. The Marine Corps has only about 66 units and the Navy, 40 units per FTE. The low ratio of units per FTE for the Navy and Marine Corps is one of the causes of the differences in management costs per unit.

We analyzed the staffing disparities to see if we could identify the causes. First, the Air Force does not use housing O&M funds for personnel salaries for staff members above the installation level. (Figure 5-2 shows no HQ/MACOM bar.) Those salaries, for 47 people, are paid from the command's non-housing budget. Only travel and training costs for those personnel are charged to the Air Force's housing O&M account. The other Services charge housing O&M for both the management salaries and support costs, although the Army intends to reallocate the salary cost to the command non-housing budget in FY02. The numbers of headquarters salaries charged amount to 40 for the Army, 117 for the Navy, and 8 for the Marine Corps.

In addition, all Services, except the Army, report that some military positions are used for family housing management at headquarters and installation levels.¹ Although these military positions and the Air Force headquarters positions are not funded from housing funds, because they are used in lieu of housing-funded positions, they affect the number of housing-funded positions needed. They therefore help to explain the wide disparity among housing-funded staffing numbers.

When we compare the total staffing profiles, regardless of where they are funded from, the total number of CONUS housing units per management FTE remains at 120 for the Army, decreases slightly to 38 for the Navy and 62 for the Marine Corps,² and the Air Force falls to 97. The non-housing funded staffing policies therefore contribute indirectly to the housing O&M management cost disparity.

Next, we looked at the sizes of installation family housing inventories to see if they added to the causes of the staffing disparities. To provide an acceptable level of management service, a minimum number of FTEs is required at each installation with family housing. A larger number of installations with small housing inventories would therefore require a greater total number of FTEs and reduce the units per FTE ratio. The average number of CONUS housing units per installation is 1,011 for the Army, 832 for the Navy, 1,200 for the Air Force, and 1,229 for the Marine Corps. Thus, Navy installations, on average, have much smaller housing inventories than the other Services—many bases have only a few hun-

¹ No staff-like contractors are used in housing management positions.

² There are no formal positions for military personnel in Marine Corps housing functions, but 17 military personnel are currently assigned informally. This number varies from 12 to 20 depending on the availability of such personnel.

dred units. The dispersion of Navy housing in small housing inventories probably contributes to the Navy's high staffing.

The third possible reason for a lower units-per-FTE ratio is a higher level of service offered. For example, the housing offices of all Services offer assistance to military personnel in locating and acquiring commercial housing, known as housing referral. If a Service has a higher workload in this function, it would explain the need for a larger management staff. The Navy houses only 25 percent of its families in family housing; for the other Services, the percentage is about 33. The average number of FTEs per installation dedicated to housing referral for those we visited is two in the Army, nine in the Navy, one in the Air Force, and three in the Marine Corps. The Navy's additional housing referral workload appears to be a contributing factor to the staffing disparity.

Another possible reason for the staffing disparity is that the Navy's EFD staffs also support Marine Corps requirements, which reduces the need for Marine Corps staffing and increases the Navy's need. However, the Marine Corps estimates that the support received from Navy EFDs amounts to only a half person-year, and it is therefore not a major factor for the staffing disparity.

We calculated a CAF to adjust for the differences in staffing charged to the housing O&M management account without judging the merits of the policies or the staffing levels. To do this, we compared each Service's management staffing level with the average for all Services. On this basis, the required CAF for the Army is 1.21; Navy, 0.73; Air Force, 1.27; and Marine Corps, 0.99.

HEADQUARTERS SUPPORT COST

In addition to differences in staffing, the management funding the Service headquarters and MACOMs spend to support family housing contributes to the difference in per unit cost. The Army and Navy spend more than the Air Force and Marine Corps. For example, in FY98, headquarters spending for indirect support and analyses for the Army and Navy accounted for about 25 percent of their management budgets, but was negligible for the Air Force and Marine Corps. The different spending levels are directly attributable to policy differences.

The Marine Corps has minimized its investment in management support. For example, it will not invest in its own comprehensive automated management system for family housing, and it keeps management studies to a minimum. The Air Force charges some housing management support to non-housing accounts when the support for housing can be defined as incidental to the total support item provided. For example, the Air Force does not charge its housing account for support provided to housing ADP equipment.

To account for these policy differences, we calculated CAFs for headquarters support. The CAF for the Army is 0.93; Navy, 0.82; Air Force, 1.23; and Marine Corps, 1.22.

OTHER FACTORS

Although the Services have other management policy differences, they do not significantly affect the management costs per unit. For example, Air Force installations do not charge their installation housing O&M accounts for management and administrative support provided by other installation functions. In the other Services, housing is fully charged for such support, but the effects are too small to segregate and assign a CAF.

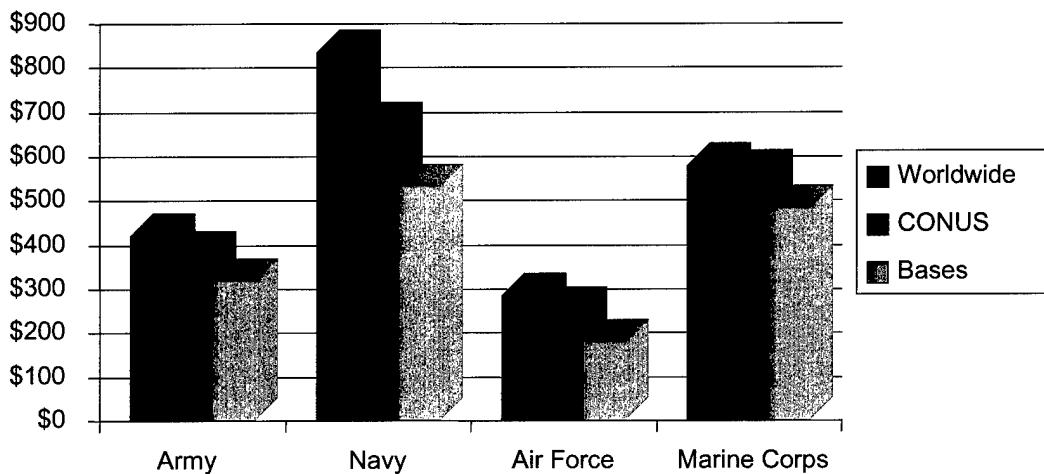
Chapter 6

Services

INTRODUCTION

The Services budget category is small, amounting to only 5 to 11 percent of total O&M spending. In FY98, the actual CONUS cost per unit for services ranged from \$255 to \$671 across the four Services. As shown in Figure 6-1, the Navy had the highest per unit cost and the Air Force the lowest.

Figure 6-1. FY98 Services Expenditures (\$/Unit)



The category includes the costs of refuse collection, disposal, and recycling; fire and police protection; family housing center custodial support; pest control; snow removal; street cleaning; and other miscellaneous service charges.

Refuse Collection

Refuse collection covers the cost, including contractual services, for the collection of garbage, trash, ashes, and debris and refuse disposal, such as operation and maintenance of incinerators and sanitary fills. It includes the costs for acquisition, maintenance, and repair of garbage and trash containers and operation of can-washing facilities.

Fire and Police Protection

Fire and police protection covers the costs of law enforcement, traffic control, and protection of government property and of fire protection and prevention when the presence of family housing facilities results in such an increment to the capabilities of the installation.

Custodial Services

Custodial services include the cost of janitorial services in common service areas and the cost of elevator operations in family housing facilities. It includes the cost of custodial services within dwelling units when required and authorized.

Entomology Services

These services include the cost of prevention and control measures directed against fungi, insects, and rodents within family housing dwellings, facilities, and areas. It excludes the cost of repair of damage to buildings caused by such pests.

DIFFERENCES IN CHARGING POLICIES

The Services—and, in some cases, installations within a Service—have different policies for charging services to housing O&M. Table 6-1 presents the application of service charges for the 15 military installations we visited for this study.

Table 6-1. Service Charges by Surveyed Installation

Item	Army	Navy	Air Force	Marine Corps
Number of bases visited	4	4	5	2
Refuse	4	4	5	2
Fire protection	4	4	0	2
Police protection	4	4	0	2
Custodial	1	2	1	2
Pest control	4	4	2	2
Other	3	4	4	2

Of these installations, only the two Marine Corps bases charged housing O&M for all of the services defined above. Some Army, Navy, and Air Force installations do not charge housing for custodial or entomology services. However, the inconsistency of the policies within the Military Services prevented our calculating CAFs to account for how those policy differences affect total spending in this budget category.

The major exception is the Air Force's policy of not charging housing O&M for fire and police protection for family housing areas. The other Services all charge for this protection; it is their highest cost in the service budget category.

Because of this clear and quantifiable policy difference, we developed a CAF for the Air Force service budget category. The CAF (2.64) is based on the average fire and police protection cost per unit for the Army, Navy, and Marine Corps.

CHARGING INCONSISTENCIES

The methodologies for charging some services to housing O&M are not consistent among installations even within a Service. The Army, Navy, and Marine Corps installations we visited charge family housing for fire protection either on a pro rata basis or on the basis of a formula of the number of fire personnel required to support family housing. The pro rata methodology also varied by installation and included

- ◆ number of housing units to total facilities,
- ◆ housing population to total population, and
- ◆ housing square footage to total square footage.

For police protection the Army, Navy and Marine Corps also used a pro rata methodology to allocate costs to family housing. The basis for the pro rata approach also varied and included

- ◆ housing population to total population,
- ◆ housing calls to total calls,
- ◆ housing plant value to total plant value,
- ◆ housing square footage to total square footage, and
- ◆ number of housing units to number of total facilities.

The Services and individual installations consistently applied the same methodology for refuse collection and entomology services. Refuse collection is based on weight or volume. All of the installations we visited use a refuse collection service dedicated to family housing. Also, all installations we visited generally charge for entomology services by the hour.

The inconsistency of the methodologies within the Services did not provide adequate details for calculating CAFs to account for any differences in total spending in this budget category.

Chapter 7

Furnishings

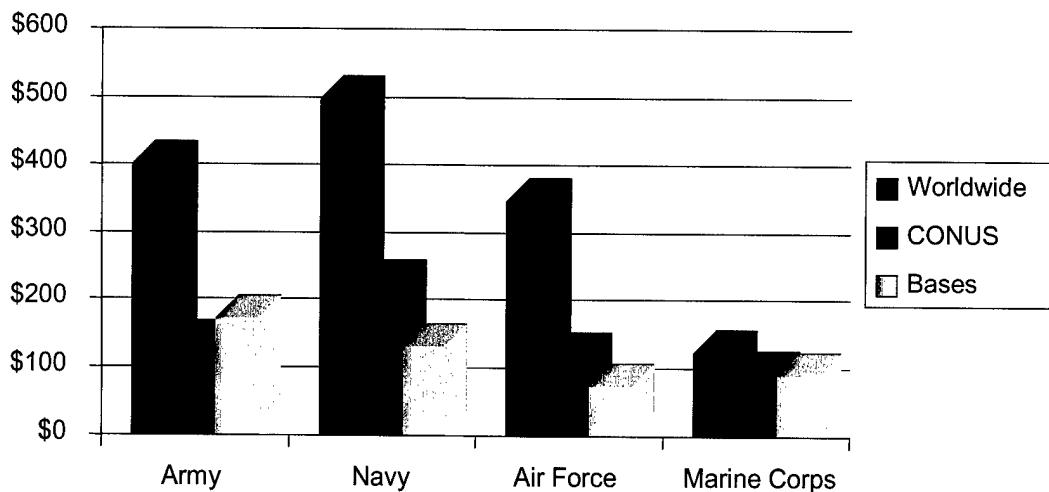
INTRODUCTION

The furnishings budget category is the smallest of the five categories examined, constituting 2 percent of the Services' housing O&M spending. Its major cost elements are as follows:

- ◆ *Control, moving, and handling.* This covers the administration and moving of government-owned equipment in or out of family housing, including connection and disconnection of equipment and appliances when incident to use or storage. Moving and handling costs incident to repair should be charged to the appropriate repair account.
- ◆ *Furniture maintenance and repair.* This covers repairing, refinishing, rebuilding, reupholstering, cleaning, and sterilizing government-owned furniture, including soil preventive treatment of upholstered material.
- ◆ *Furniture purchases.* This covers replacement of furniture in family housing or increases to inventory, including new items added to the common tables of allowance (CTA 50-909, Table 45) and the cost of special allowance items such as crystal, silver, and linens procured for special command positions.
- ◆ *Equipment maintenance and repair.* This covers inspection, maintenance, and repair of authorized government-owned household equipment, such as clothes washers, dryers, ranges, microwaves, refrigerators, freezers, portable dishwashers, and portable fans.
- ◆ *Equipment purchases.* This covers replacement, procurement, and normal installation of authorized household equipment, including new items added to common tables of allowance (CTA 50-909, Table 45). It excludes the costs of modifying existing facilities to accommodate equipment being installed.

In FY98, the actual CONUS furnishings per unit cost ranged from the Air Force's \$91 to the Navy's \$224. (See Figure 7-1.)

Figure 7-1. FY98 Furnishings Expenditures (\$/Unit)



FINDINGS

The Services and the installations we visited described the same accounting practices for furnishings: paying for actual work performed and the cost of each item purchased. These practices seemed to be consistently applied. The installations pay similar prices for new appliances such as stoves, refrigerators, and dishwashers.

Costs are cyclical in nature, and meaningful comparisons cannot be made over just 1 or 2 years. Installations tend to place bulk orders for furnishings and then take replacements out of stock as needed.

Because of this unstable expenditure pattern and the small effect that furnishing purchases have on total O&M spending, we did not calculate any CAFs for this budget category.

Chapter 8

Total Cost Adjustments

CAF SUMMARY

Table 8-1 summarizes the CAFs calculated in the preceding chapters. It also shows the overall CAF for each Service for its CONUS housing O&M costs.

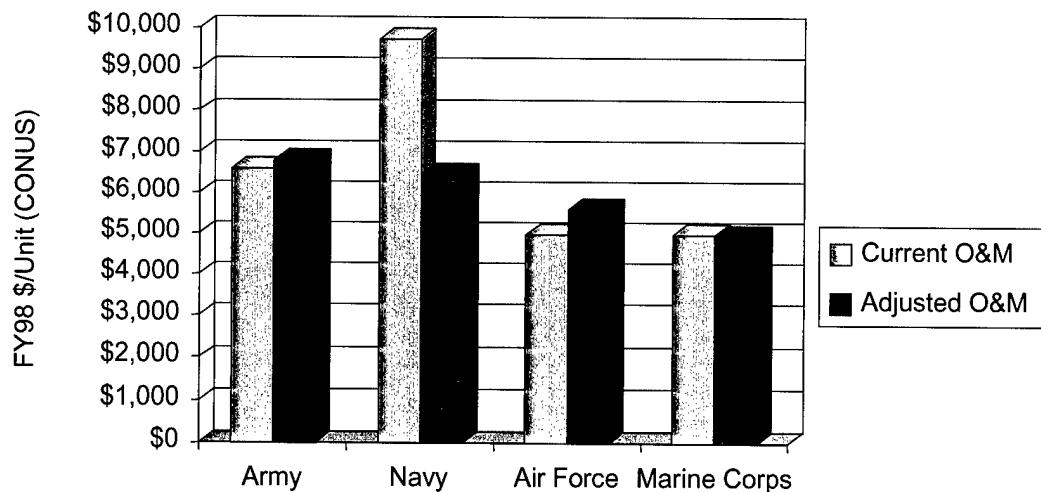
Table 8-1. CAF Summary

Factor	Army	Navy	Air Force	Marine Corps
Fire and police services	1.00	1.00	2.64	1.00
Management and staffing	1.13	0.60	1.56	1.21
Headquarters and base staffing	1.21	0.73	1.27	0.99
Headquarters charges	0.93	0.82	1.23	1.22
Utility rates and subsidies	1.00	1.00	1.00	0.82
Maintenance	1.02	0.51	0.96	1.05
Area costs	1.02	0.95	1.00	1.03
Maintenance surcharges	1.00	0.90	1.00	1.00
Incidental alterations/additions	1.00	1.00	0.96	1.02
Backlog reduction	1.00	0.60	1.00	1.00
Overall O&M CONUS \$/unit	1.03	0.66	1.12	0.99

The overall O&M CAFs are not simply the sum or product of the CAFs for each budget category. Since the size of the budget—and, hence, the spending among the categories—varies, some CAFs leverage total O&M spending more than others. For example, a small CAF for maintenance, which is about half of all O&M spending, would have a greater effect on the total O&M amount than would a large CAF for services, which constitutes only 5 to 11 percent of O&M spending. The CAFs are, therefore, weighted by the size of their budget categories to produce the overall CAFs.

When we apply the overall CAFs to the Services' FY98 housing O&M spending, we eliminate the effects of the factors we were able to confirm and quantify. The result is a notional spending picture with much less variability. Figure 8-1 compares the actual FY98 spending with the notional spending after adjustment.

Figure 8-1. FY98 CONUS Current O&M and Adjusted O&M Costs (\$/Unit)



When we apply the CAFs, we account for 62 percent of the differences in the Services' O&M funding. We measure those differences by adding the absolute values of the differences between each Service's spending and the average spending of all Services, before and after the CAFs are applied. We then express the difference in the results as a percentage of the "before" figure.

Of the 38 percent of the differences for which the CAFs do not account, the biggest factor appears to be the priority each Service gives to housing O&M funding. Priority manifests itself at every level and permeates the entire process of requesting, justifying, and receiving funds. However, its effects cannot be reasonably quantified in a CAF. Another major factor may be differences in each Service's maintenance standards. Without a common condition rating system, however, this factor cannot be quantified.

APPLICATION OF THE CAFS

CAFs should be applied only to the CONUS per unit costs in the budgets, and they should be reviewed annually because policies are constantly changing. For example, the Navy intends to drastically reduce spending on incidental alterations and additions, which will change the CAFs developed for that factor. Also, large, nonrecurring expenditures may skew future spending patterns. A large computer buy, for example, may inflate 1 year of a Service's management budget. Applying the FY98 CAF to that inflated budget category would therefore no longer account for all of the quantifiable differences.

Appendix A

Installations Visited

LMI visited the following installations in the course of this study:

- ◆ Edwards Air Force Base (AFB), California
- ◆ Fort Bragg, North Carolina
- ◆ Fort Eustis, Virginia
- ◆ Fort Lewis, Washington
- ◆ Grand Forks AFB, North Dakota
- ◆ Hanscom AFB, Massachusetts
- ◆ Langley AFB, Virginia
- ◆ Marine Corps Air Station Cherry Point, North Carolina
- ◆ Marine Corps Base Camp Pendleton, California
- ◆ Naval Air Station Whidbey Island, Washington
- ◆ Naval Station Norfolk, Virginia
- ◆ Naval Station San Diego, California
- ◆ Naval Submarine Base Bangor, Washington
- ◆ Pope AFB, North Carolina
- ◆ Presidio of Monterey, California.

Appendix B

Definitions

This appendix contains the definitions each Service uses for the categories that constitute the O&M budget: furnishings, services, management, utilities, and maintenance and repair.

Army	Navy	Air Force	Marine Corps
Furnishings			
19131A.00 Control, Moving and Handling, Equipment (GFOQ)	BP14 CAC 92M0 Control, Moving, and Handling	Furnishings-Government Dwellings	BP12 Section 1 Cost of repair, refinishing, rebuilding, reupholstering, cleaning and sterilization of furnishings and including movable equipment.
19132A. Control, Moving and Handling, Equipment (Excluding GFOQ)	Includes the costs (direct and indirect) of administering, record-keeping, moving, and handling Government-owned furnishings; and connecting and disconnecting household equipment. Includes all operating costs incident to furnishings storage and labor costs for warehousemen.	Includes the costs of government-owned furnishings provided to government-owned family dwelling units. This includes replacement, increases to inventories, maintenance and repair, moving and handling of household furniture, equipment, and domestic appliances not installed, where authorized.	BP12 Section 2 Moving and handling of government-owned furnishings (including equipment). (Includes the cost of moving government-owned furnishings into and/or out of dwelling units and necessary storage and handling costs of housing furnishings not in the dwelling unit when properly chargeable to the housing allotment. Includes cost of moving and handling of government-owned equipment into and out of dwelling.)
Administering of and the moving of government owned equipment in or out of family housing. Includes connection and/or disconnection of equipment/appliance when incident to use of storage. Moving and handling costs incident to repair should be charged to the appropriate repair account.	BP14 CAC 93A0 Family Housing, Furniture Maintenance and Repair	Furnishings-Other	BP12 Section 3 Cost of replacement furnishings (including equipment) inventory or increases in inventory within authorized allowances.
191311.00 Control, Moving, and Handling Furniture (GFOQ)	Includes the costs (direct and indirect) of repairing, refinishing, rebuilding, reupholstering, cleaning, and sterilizing Government-owned furnishings less household equipment.	Includes the costs of government-owned furnishings provided for leased housing. Also includes costs of government owned furnishings for overseas privately leased family housing. This includes replacement, maintenance, and repair, moving and handling of household furniture, equipment, and domestic appliances not installed, where authorized.	BP12 Section 4 When specifically approved by CMC, the cost of initial procurement and replacement of furnishings (including equipment) for general officers' and commanding officers' quarters.
191321.00 Control, Moving, and Handling Furniture (Excluding GFOQ)	BP14 CAC 93B0 Furniture Replacement	Cost of furnishings procured as part of the initial outfitting of newly acquired housing units, when authorized. Does not include cost of equipment procured as part of the initial outfitting of newly acquired housing units.	BP12 Section 5
Administering of and the moving of Government-owned furniture into and/or out of family housing. Moving and handling costs incident to repair should be charged to the appropriate repair account.	Includes the costs for acquisition of family housing furnishings (less equipment) for replacement of authorized complement.	BP12 Section 6 Cost of special allowance for special common position quarters when specifically approved by CMC.	
191312.00 Maintenance and Repair, Furniture (GFOQ)	BP14 CAC Furniture, Initial Issues		
191322.00 Maintenance and Repair, Furniture (Excluding GFOQ)	Includes the costs of furnishings (less equipment) procured to initially outfit newly acquired housing units and for augmentation up to authorized complement as prescribed by current instructions.		
Repairing, refinishing, rebuilding, reupholstering, cleaning, and sterilizing of Government-owned furniture, including soil preventive treatment of upholstered material.	BP14 CAC 93D0 Equipment Maintenance and Repair		
191313.00 Furniture Purchases (GFOQ)	Includes the costs for repairing, inspecting, and maintaining Government-owned household equipment not included in class 2 plant property. Household equipment includes cooking stoves, re-		
191323.00 Furniture Purchases (Excluding GFOQ)			

Army	Navy	Air Force	Marine Corps
<p>Replacement of furniture in family housing or increases to inventory to include new items added to Tables of Allowances (CTA 50-909, Table 45). Includes the cost of special allowance items, such as crystal, silver, and linens procured for special command positions.</p> <p>191315.00 Maintenance and Repair, Equipment (GFOQ)</p> <p>191325.00 Maintenance and Repair, Equipment (Excluding GFOQ)</p> <p>Inspection, maintenance, and repair of authorized Government-owned household equipment. Includes clothes washers, dryers, ranges microwaves, refrigerators, freezers, portable dishwashers, and portable fans.</p> <p>191316.00 Equipment Purchases (GFOQ)</p> <p>191326.00 Equipment Purchases (Excluding GFOQ)</p> <p>Replacement, procurement, and normal installation of authorized household equipment. Includes cost of new items added to Table of Allowances (CTA 50-909, Table 45). Excludes the costs of modifying existing facilities to accommodate equipment being installed.</p> <p>191319.00 Indirect Support Services (GFOQ)</p> <p>191329.00 Indirect Support Services (Excluding GFOQ)</p> <p>Indirect support services provided for operation of family housing.</p> <p>191328.00 Military Housing Rental Guarantee Program (Excluding GFOQ)</p> <p>Furnishings cost associated with administration of Military Housing Rental Guarantee Program, 10 U.S.C. 2836.</p>	<p>refrigerators, clothes washers, clothes dryers, freezers, portable dishwashers, fans, and other authorized equipment not part of the dwelling units.</p> <p>BP14 CAC 93E0 Equipment Replacement</p> <p>Includes the costs for acquisition of household equipment for replacement of authorized complement, not included in class 2 plant property.</p> <p>BP14 CAC 93F0 Equipment, Initial Issue</p> <p>Includes the costs of acquiring household equipment for initial issue and for augmentation up to authorized complement. Excludes the cost of household equipment procured as part of a construction project.</p>		

Army	Navy	Air Force	Marine Corps
Services			
191211.00 Refuse Collection and Disposal (GFOQ)	BP 10 CAC 92I0 Refuse Collection and Disposal	721.21 Services-Government Dwellings	BP11 Section 1 Other services (General) such as refuse collection and removal, custodial services, insect and rodent control and snow removal.
191214.00 Entomology Services (GFOQ)	Includes the costs, including contractual services, for collection of garbage, trash, ashes, and debris from family housing units or grounds areas and refuse disposal, including the operation, maintenance and repair of incinerators, sanitary fills, burning pits, open-burning areas, dumps, and all other approved methods. Includes acquisition costs of individual dwelling garbage and trash containers, maintenance and repair of containers, and operation of can-washing facilities.	Includes the costs of municipal-type services, such as refuse collection and disposal, fire protection, police protection, entomological services, and custodial services, that support government-owned family housing units.	BP11 Section 2 Police protection and fire protection (when performed solely for Family Housing).
191215.00 Custodial Services (GFOQ)	BP10 CAC 92G0 Pest Control	721.22 Service-Other	
191216.00 Municipal Type Services (GFOQ)	Includes the cost of all control measures directed against fungi, insects, and rodents within family housing dwellings, facilities, and areas. Excludes cost of repair of damage to buildings that will be charged to the appropriate maintenance and repair account.	Includes the costs of municipal-type services, such as refuse collection and disposal, entomological services, snow removal and street cleaning, that support other family housing properties and programs.	
191217.00 Indirect Support Services (GFOQ)	191221.00 Refuse Collection and Disposal (Excluding GFOQ)	721.29 Services-Other (Non-prorated)	
Cost, including contractual services, for collection of garbage, trash, ashes, and debris and refuse disposal, such as operation and maintenance of incinerators, sanitary fills, and regulated. Includes the costs for acquisition, maintenance, and repair of garbage and trash containers, and operation of can washing facilities.	Includes the cost for change of occupancy fumigation. Excluded is the cost for repair of damage to buildings as a result of pest infestation, which should be charged to the appropriate maintenance and repair account.	Includes nonprorated services provided to general officer quarters (GOQ).	
191224.00 Entomology Services (Excluding GFOQ)	BP 10 CAC 92C0 Family Housing Custodial Services	721.21 Services-Government Dwellings	
Prevention and control measures directed against fungi, insects, and rodents within family housing dwellings, facilities, and areas. Excludes cost of repair of damage to buildings that will be charged to the appropriate maintenance and repair account.	Includes the costs of a janitorial and custodial services performed in common service areas of family housing and cost of elevator operations in family housing facilities.	Includes the costs of municipal-type services, such as refuse collection and disposal, fire protection, police protection, entomological services, and custodial services, that support government-owned family housing units.	
191225.00 Custodial Services (Excluding GFOQ)	BP10 CAC 92L0 Snow Removal		
Custodial service includes the cost of janitorial services in common service areas, and the cost of elevator operations in family housing facilities. Includes cost of custodial services within dwelling unit when required and authorized.	Includes the costs of removal, hauling, and disposal of snow, ice, sand and scrap material from family housing facilities. Also includes the erection, maintenance, repair and removal of snow fences.		
191226.00 Municipal Type Services (Excluding GFOQ)	BP 10 CAC 92H0 Street Cleaning		
Municipal type services not identifiable to or separable from other cost accounts.	Includes the costs of cleaning streets including sweeping, flushing, and litter pickup.		
191227.00 Indirect Support Services (Excluding GFOQ)	BP10 CAC 92J0 Municipal-Type Services		
Indirect support services provided for operation of family housing.	Includes the costs for comprehensive miscellaneous public services such as police or fire		
191229.00 Military Housing Rental Guarantee Program (Excluding GFOQ)			
Services cost associated with			

Army	Navy	Air Force	Marine Corps
<p>administration of Military Housing Rental Guarantee Program, 10 U.S.C. 2836.</p> <p>191230.00 Services Military Housing</p> <p>191232.00 Services Military Housing Privatization Initiative Locations</p> <p>Cost incurred after privatization by AFH appropriation for services needed by family housing units at privatization initiative locations. Costs include refuse collection and disposal, fire protection, police protection, entomology services, custodial services, and indirect support services.</p> <p>191213.00 Police Protection (GFOQ)</p> <p>191223.00 Police Protection (Excluding GFOQ)</p> <p>Law enforcement, traffic control, and protection of government property when the presence of family housing facilities results in such an increment to the police protection capabilities of the installation.</p> <p>191212.00 Fire Protection (GFOQ)</p> <p>191222.00 Fire Protection (Excluding GFOQ)</p> <p>Fire protection and prevention when the presence of family housing facilities results in such an increment to the fire protection and prevention capabilities of the installation.</p>	<p>protection, street cleaning, refuse collection services not identifiable to or separable from other listed cost accounts. Includes "Rates" in the United Kingdom that are contributions in lieu of taxes at 35% thereof for municipal services.</p> <p>BP10 CAC 92K0 Other Services</p> <p>Includes the costs for all other authorized services.</p> <p>BP10 CAC6B60 Police Protection</p> <p>Includes the costs of law enforcement, traffic control, and protection of government property, as well as the cost of service provided by local or state municipalities where contractual agreements are in effect. Prorated costs for police protection provided by government forces will be charged on the full absorption basis for family housing.</p> <p>BP10 CAC 9370 Family Housing, Fire Protection</p> <p>Includes the costs for fire protection and prevention, as well as the cost of services provided by local or state municipalities where contractual agreements are in effect. Prorated costs for fire protection provided by government forces will be charged on the full absorption basis for family housing.</p>		

Management

191110.00 Management General/Flag Officer Quarters	BP11. CAC 9130 Family Housing Office	721.11 Management-Government Dwellings	BP11 Operating Services Project No. 4
Management of family housing which is designated for or occupied by a general or flag officer.	All direct costs incurred in performance of family housing functions/services, including labor, supplies, equipment, utilities, travel, per diem, tuition costs, telephone service, and other costs readily identifiable to the housing office. Also, includes a vehicle costs where applicable.	All direct administration costs to support government dwelling units at installation level. This includes management office, office personnel, supplies, equipment, custodial services, and occupancy inspections and surveys for the family housing office functions.	Cost of operating family housing offices, including labor, supplies, equipment, utilities.
191112.00 Management - Family Housing (Excluding General/Flag Officer Quarters)	BP11 CAC915K Housing Referrals	Management-Other	BP14 Housing Referral
Management of active government housing, excluding general/flag officer quarters.	All administrative costs pertaining to the provision of referral services including referral office personnel, supplies, equipment, utilities, and other costs readily identifiable	All direct administration costs to support leased and other family housing properties and programs at installation level. This includes management office personnel, supplies, equipment, custodial services, occupancy inspection, preliminary	Cost of providing housing referral services.
191111.00 Family Housing Office (GFOQ)			BP11 Operating Services Project No. 3
Includes all direct family housing administration costs at all levels			Administrative and support-type services at installation pertinent to operation of family housing facilities and housing referral.
191121.00 Family Housing Office including Family Hous-			

Army	Navy	Air Force	Marine Corps
ing Referral (Excluding GFOG) Includes all direct family housing administration costs at all levels.	to the housing referral function.		
191118.00 Environmental Studies (GFOQ)	BP11 CAC9160 Programming and Studies Includes all costs for requirements surveys, preliminary studies, and engineering construction plans made prior to OSD approval of new housing or improvement projects; rental guarantee projects; and inspection of construction of rental guarantee housing construction.		
191128.00 Environmental Studies (Excluding GFOQ) Management of environmental programs to include salaries of environmental coordinator staff and other personnel dedicated to environmental program management contracts, consultant fees, equipment and other administrative costs. Includes special studies, assessments, training and implementation of Army directed programs associated with compliance with federal, state or local environmental laws and regulations. Does not include DERA-funded program management costs, or costs properly chargeable to repair and maintenance or minor construction (GFOG).	BP11 CAC9160 Administrative Support Includes indirect administrative support services costs incurred in supply, comptroller, management office, administration, maintenance control, ADP, and other installation offices identifiable to the family housing functions. Also includes the operating equipment and utility costs for administrative support services provided, prorated to family housing. At nonindustrial activities, administrative costs of an indirect nature incurred by installation maintenance offices (public works department or other general station overhead) will be included in this cost classification based on the full absorption policy.		
191129.00 Military Housing Rental Guarantee Program (Excluding GFOQ) Management costs associated with administration of Military Housing Rental Guarantee Program, 10 U.S.C. 2836.			
191130.00 Project Development—Military Housing Privatization Initiative			
191131.00 Project Development—Military Housing Privatization Initiative			
Cost incurred by AFH appropriation for Capital Venture Initiative project development prior to award. Costs include feasibility studies, specifications, estimates, development of RFP review, administrative costs, studies, market surveys, consulting services, travel, planning and design of construction, and working drawings.			
191132.00 Management—Military Housing Privatization Initiative			
Cost incurred after privatization by AFH appropriation for the management of family housing units at privatization initiative locations. Costs include personnel expenses, general administrative support,			

Army	Navy	Air Force	Marine Corps
contract administration, studies, and indirect support services.			
Utilities			
193000.00 General/Flag Officer Quarters Utilities consumed in family housing and supporting activities. Excludes the cost of maintenance and repair of utility systems. Utilities include (1) electricity procured and/or generated for consumption within family housing, (2) gas fired (natural, manufactured, LPG, etc.) heating plants for the production of steam, hot water hot air, and heat for cooking, (4) water procured or provided for consumption in family housing (includes watering of yards), and (5) sewage disposal for family housing. 193011.00 Other Utilities and Fuels-General/Flag Officer Quarters Operation of heating plants not provided for above, and the cost of other utilities, such as steam and coal provided to family housing. Separately billed connection, facility, or other charges amortizing construction costs and not related to consumption or usage will be recorded in this account. Includes cost of operation of Government-owned TV antenna and distribution systems used exclusively for family housing and/or the procurement of such services from commercial sources. Excludes CATV (a commercial) service, which cannot be accomplished with appropriate funds. 193020.00 General/Flag Officer Quarters (Historic) Utilities consumed in family housing and supporting activities that are designated under the National Historic Preservation Program. Excludes the cost of maintenance and repair of utility systems. Utilities include: (1) electricity procured and/or generated for consumption within family housing, (2) gas fired (natural, manufactured, LPG, etc.) heating plants for the production of steam, hot water hot air, and heat for cooking, (4) water procured or provided for	CAC 8380 Electricity Includes the costs for electricity procured and/or generated for consumption within family housing units, street and area lighting systems and supporting facilities. CAC 87N0. Gas Includes the costs for gas (natural, manufactured, LPG, or other) procured for consumption in family housing and supporting facilities. CAC 87L0 Fuel Oil Includes the costs for fuel oil procured for consumption in family housing and supporting facilities. Also includes the cost of delivery when not already included in the fuel cost. CAC 8480 Water Includes the costs for water procured or produced for consumption in family housing and supporting facilities. Also includes water used for family housing grounds maintenance. CAC 8580 Sewage Includes the costs for sewage disposal for family housing and supporting facilities. When sewage metering or contract provisions do not enable measuring or computing sewage quantities, use 70 percent of water consumed as the quantity of sewage disposed. CAC 8910 Family Housing, Other Utilities and Fuels Includes the costs for all other utilities not specified in the above lines, such as steam and coal.	728 Utilities This project provides for all utilities consumed in family housing as authorized. 728.11 Government Dwellings This subproject includes costs of utilities consumed in government-owned family dwelling units. It also includes cost of reimbursable utility services furnished to civilian occupants of CONUS government quarters. It provides for: The cost of water procured or produced for consumption. The cost of electricity procured or produced. The cost of gas, fuel oil, and coal (including delivery costs, if applicable) procured. The cost of sewage disposal procured or produced. The cost of base produced utilities transferred to family housing, the cost of heating and air conditioning plant operations, and the cost of other utilities or fuels, such as steam and coal, provided to government-owned family dwelling units. Utility construction amortization costs. 728.12 Other This subproject includes costs of utilities consumed in other family housing properties. It also includes cost of reimbursable utility services furnished to privately-owned trailers located in base-operated trailer parks. It provides for the same utility services as outlined in subproject 728.11, subparagraphs 1-6, as applicable to other family housing properties.	BP15 Section 1 All costs incurred in providing utilities service for family housing (except tenant telephone service).

Army	Navy	Air Force	Marine Corps
consumption in family housing (includes watering of yards), and (5) sewage disposal for family housing. 193021.00 Other Utilities and Fuels-GFOQ Historic Operation of heating plants not provided for above, and the cost of other utilities, such as steam and coal provided to family housing designated under the National Historic Preservation Program. Separately billed connection, facility, or other charges amortizing construction costs and not related to consumption or usage will be recorded in this account. Includes cost of operation of Government-owned TV antenna and distribution systems used exclusively for family housing and/or the procurement of such services from commercial sources. Excludes CATV (a commercial) service, which cannot be accomplished with appropriate funds.			
193030.00 Family Housing (Excluding General/Flag Officer Quarters) Utilities consumed in family housing and supporting activities. Excludes the cost of maintenance and repair of utility systems. Utilities include: (1) electricity procured and/or generated for consumption within family housing, (2) gas fired (natural, manufactured, LPG, etc.) heating plants for the production of steam, hot water hot air, and heat for cooking, (4) water procured or provided for consumption in family housing (includes watering of yards), and (5) sewage disposal for family housing.			
193031.00 Other Utilities and Fuels (Excluding GFOQ) Operation of heating plants not provided for above, and the cost of other utilities, such as steam and coal provided to family housing designated under the National Historic Preservation Program. Separately billed connection, facility, or other charges amortizing construction costs and not related to consumption or usage will be recorded in this account. Includes cost			

Army	Navy	Air Force	Marine Corps
<p>of operation of Government-owned TV antenna and distribution systems used exclusively for family housing and/or the procurement of such services from commercial sources. Excludes CATV (a commercial) service, which cannot be accomplished with appropriate funds.</p> <p>193032.00 Military Housing Privatization Initiative Locations</p> <p>Cost incurred after privatization by AFH appropriation for utilities in family housing units at privatization initiative locations. Cost include: (1) utilities consumed in family housing and supporting activities, (2) electric procured or produced, (3) gas procured or provided by heating plant, (4) gas fired heat plant (natural, manufactured, LPG etc.) for the production of steam, hot water, and heat for cooking, (5) fuel oil fired heating plants for the production of steam, hot water, hot air, and heat, (6) water procured or provided for consumption in family housing (includes watering of yards), (7) sewage disposal for family housing, (8) cost of other utilities such as steam and coal, and (9) operation of Government owned TV antenna and distribution systems used exclusively for family housing and/or the procurement of such services.</p> <p>193040.00 Utilities (Excluding GFOQ) (Historic)</p> <p>Utilities consumed in family housing and supporting activities that are designated under the</p> <p>National Historic Preservation Program. Excludes the cost of maintenance and repair of utility systems. Utilities include: (1) electricity procured and/or generated for consumption within family housing, (2) gas fired (natural, manufactured, LPG, etc.) heating plants for the production of steam, hot water hot air, and heat for cooking, (4) water procured or provided for consumption in family housing (includes watering of yards), and (5) sewage disposal for</p>			

Army	Navy	Air Force	Marine Corps
family housing. 193041.00 Other Utilities and Fuels (Excluding GFOQ) (Historic) Operation of heating plants not provided for above, and the cost of other utilities, such as steam and coal provided to family housing designated under the National Historic Preservation Program. Separately billed connection, facility, or other charges amortizing construction costs and not related to consumption or usage will be recorded in this account. Includes cost of operation of Government-owned TV antenna and distribution systems used exclusively for family housing and/or the procurement of such services from commercial sources. Excludes CATV (a commercial service, which cannot be accomplished with appropriate funds.)			
193060.00 Mobile Home Spaces and Other Housing Facilities Utilities consumed in family housing and supporting activities. Excludes the cost of maintenance and repair of utility systems. Utilities include: (1) electricity procured and/or generated for consumption within family housing, (2) gas fired (natural, manufactured, LPG, etc.) heating plants for the production of steam, hot water hot air, and heat for cooking, (4) water procured or provided for consumption in family housing (includes watering of yards), (5) sewage disposal for family housing, and (6) connection of utility lines to trailers and mobile homes. Excludes commercial services that cannot be funded with AFH appropriations.			
193061.00 Other Utilities and Fuels-Mobile Home Spaces and Other Housing Facilities Operation of heating plants not provided for above, and the cost of other utilities, such as steam and coal provided to family housing designated under the National Historic Preservation Program. Separately billed connection, facility, or other charges			

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<p>amortizing construction costs and not related to consumption or usage will be recorded in this account. Includes cost of operation of Government-owned TV antenna and distribution systems used exclusively for family housing and/or the procurement of such services from commercial sources. Excludes CATV (a commercial) service, which cannot be accomplished with appropriate funds.</p> <p>193960.00 Military Housing Rental Guarantee Program</p> <p>Utility costs associated with operation of Military Housing Rental Guarantee Program, 10 U.S.C. 2836 (formerly Sec 802, Rental Guarantee Housing).</p>			
Maintenance and Repair			
<p>192000.00 Maintenance of Real Property Facilities</p> <p>Maintenance and repair of buildings, roads, driveways, walks, exterior and interior utility systems, and ground care; maintenance and repair fixtures and equipment which are integral components of a housing unit; costs of acquisition of materials and equipment for use in the occupant self-help program. Includes costs of alterations and additions (incidental improvements). Includes all costs of ungraded employees performing maintenance functions.</p> <p>192100.00 Recurring Maintenance and Repair</p> <p>Maintenance and repair to dwelling units, exterior utility systems, and other real property facilities.</p> <p>192110.00 General Flag Officer Quarters</p> <p>Recurring maintenance and repair of family housing which is designated for or occupied by general flag officers.</p> <p>192111.00 General Flag Officer Quarters (GFOQ)</p> <p>Minor work accomplished in response to service calls and routine maintenance accomplished periodically and at change of occupancy, including interior painting.</p> <p>192112. General/Flag Officers Quarters</p>	<p>CAC 70A0 Alterations and Additions</p> <p>Includes the costs of incidental alterations, additions, and expansions to existing real property. Excludes such efforts if occasioned by or made in conjunction with separate undertakings that exceed fiscal limitations.</p> <p>CAC 71B0 Family Housing, Routine Maintenance</p> <p>Includes costs of routine maintenance usually scheduled for performance annually or more frequently, such as seasonally.</p> <p>CAC 71C0 Family Housing, Minor Repairs and Replacement</p> <p>Includes the costs of all repair, rehabilitation (exclusive of any improvements, alterations, or additions), and replacement of structural components and installed equipment, not identified as routine maintenance, not requiring more than 80 man-hours per unit for accomplishment and funded within the local activity commanding officer's authority for funding approval.</p> <p>CAC 71E0 Painting, Exterior</p> <p>Includes the costs of exterior painting and necessary preparation prior to painting of dwelling units, including carports and garages. Included the cost of exterior painting performed as routine maintenance, re-</p>	<p>722.62 Maintenance and Repair-Government Dwellings</p> <p>This subproject includes all maintenance and repair of government-owned family housing units, whether provided by in-service personnel or separately contracted by the government. This includes installed equipment such as hot water heaters, dishwashers, garbage disposals, furnaces, air conditioners, and interior utilities as authorized. Also includes cleaning and clearing of government quarters, after change of occupancy maintenance.</p> <p>722.67 Self-Help Store-Other</p> <p>This subproject includes all costs of self-help bench stock-type materials issued to military family housing occupants to perform minor maintenance and repair on their dwelling units. It also includes the cost of personnel who manage the self-help store, or issue materials and tools to housing occupants. Governing AFIs outline procedures and limitations.</p> <p>722.71 Maintenance and Repair of Utilities (Exterior)-Other</p> <p>This subproject includes all maintenance and repair of exterior utility systems that primarily serve family housing units or areas. It excludes utility lines or mains that may pass through or front on family</p>	<p>BP21 Section 1</p> <p>Recurring Maintenance and maintenance and Repair (General) repair of buildings (exterior and interior), roads, driveways, walks, utility systems, and grounds care.</p> <p>BP21 Section 2</p> <p>All repair projects where costs do not exceed \$5,000 for any one dwelling unit and all projects where total cost is \$10,000 or less.</p> <p>BP21 Section 3</p> <p>Recurring maintenance, repair, and replacement of fixtures and other equipment that are integral components of a housing unit.</p>

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Quarters Cleaning of housing facilities after occupant has met the revised DoD standards for "broom clean" pursuant to the quarters cleaning initiative. Cleaning of housing facilities for occupants exempted from cleaning for compassionate reasons or the convenience of the Government will be charged to services. 192113.00 General/Flag Officer Quarters (Historic) Minor work accomplished in response to service calls and routine maintenance accomplished periodically and at change of occupancy, including interior painting for quarters designated under the National Historic Preservation Program. 192114.00 Between Occupancy Maintenance Cleaning-General/Flag Officers Quarters (Historic) Cleaning of housing facilities after occupant has met the revised DoD standards for "broom clean" pursuant to the quarters cleaning initiative. Cleaning of housing facilities for occupants exempted from cleaning for compassionate reasons or the convenience of the Government will be charged to services. 192130.00 Family Housing (Built Prior 1950, Excluding GFOQ) Recurring maintenance and repair of family housing (built prior to 1950) designated as adequate public quarters and supporting facilities which are not included in any other category of housing. Excludes permit housing and general/flag officer quarters. 192131.00 Family Housing (Excluding GFOQ) Minor work accomplished in response to service calls and routine maintenance accomplished periodically and at change of occupancy, including interior painting. 192132.00 Between Occupancy Maintenance Cleaning-Family Housing (Built Prior to 1950, Excluding GFOQ) Cleaning of housing facilities	pair, and replacement. CAC 71F0 Painting, Interior Includes the costs of interior painting and necessary preparation prior to painting of dwelling units, including common spaces in multiple unit buildings. Includes the cost of interior painting performed as routine maintenance, repair, and replacement. CAC 71G0 Change of Occupancy Includes costs readily identifiable to work performed at change of occupancy. Excludes interior and exterior painting. CAC 71H0 Self-Help Includes cost of labor, equipment, material and supplies procured for provision to occupants of Department of Navy-owned housing for use in occupant performed maintenance and repair. CAC 71W0 Other Real Property Includes the cost of maintenance and repair of facilities other than dwellings such as fences, athletic and recreational facilities located within an identifiable family housing area. Includes costs for maintenance and repair of the family housing office and community buildings (including all interior utility systems) used for personnel support and service facilities directly in support of family housing, and maintenance of mobile home sites, including utility outlets at the site. Report all mobile home expenses under "Non-category K." CAC 71Y0 Family Housing, Major Repairs and Replacement Includes the cost of all repair, rehabilitation (exclusive of any improvements, alterations, or additions), and replacement of structural components and installed equipment, not identified as routine maintenance, requiring more than 80 man-hours per unit for accomplishment and funded within the activity commanding officer's authority for funding approval.	housing locations, but which serve other base locations and facilities 722.81 Maintenance and Repair of Other Real Property-Other This subproject includes all maintenance and repair of other real property facilities, such as roads, driveways, walks, common grounds, and community facilities, that are integral to a family housing area. 722.91 Minor alterations-Government dwellings This subproject includes the costs of minor alterations to government-owned dwelling units. 722.92 Minor alterations and Additions-Other This subproject includes the costs of minor alterations to other real property and buildings directly associated with a family housing area. 722.96 Major Maintenance and Repair-Government Dwellings This subproject includes major maintenance and repair projects on government-owned family housing units including those damaged or destroyed. 722.97 Major Maintenance and Repair-Other This subproject includes major maintenance and repair to other real property, private housing where authorized, and buildings directly associated with a family housing area including those damaged or destroyed.	
CAC 77A0 Maintenance of			

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<p>after occupant has met the revised DoD standards for "broom clean" pursuant to the quarters cleaning initiative. Cleaning of housing facilities for occupants exempted from cleaning for compassionate reasons or the convenience of the Government will be charged to services.</p> <p>192133.00 Family Housing (Excluding GFOQ) (Historic)</p> <p>Minor work accomplished in response to service calls and routine maintenance accomplished periodically and at change of occupancy, including interior painting for quarters designated under the National Historic Preservation Program.</p> <p>192134.00 Between Occupancy Maintenance Cleaning-Family Housing (Excluding GFO-Historic)</p> <p>Cleaning of housing facilities after occupant has met the revised DoD standards for "broom clean" pursuant to the quarters cleaning initiative. Cleaning of housing facilities for occupants exempted from cleaning for compassionate reasons or the convenience of the Government will be charged to services.</p> <p>192170.00 General Charges</p> <p>Accumulation, without proration or allocation to any category of housing, of those maintenance and repair costs not readily identifiable to one of the family housing categories.</p> <p>192210.00 Major Maintenance and Repair Projects-General Flag/Officer Quarters</p> <p>Repairs, rehabilitation (exclusive of any improvement work), and replacement of major components and installed equipment (includes heating systems, water heaters, heat exchangers, and garbage disposals).</p> <p>192211.00 Major Projects-General Flag/Officer Quarters</p> <p>Repairs, rehabilitation, and or replacement of major components of a family housing unit or directly related to the unit. Includes work to bring existing components up to current</p>	<p>Exterior Utilities</p> <p>Includes the costs for those portions of the utility distribution system assigned to the family housing property account beginning at a point five feet from the house line and ending at a point where the utility system joins a main or terminates. Includes maintenance and repair of electric, gas, water, sewage, central TV antenna, street or area lighting, and other utility distribution/collection/service systems. Includes those costs noted for exclusion in the Line B-BP 12, Utilities account, CAC's 8380, 87N0, 87L0, 8480, 8580, and 8910. Excludes costs of utility outlets for mobile home spaces.</p> <p>CAC 7360 Surfaced Areas</p> <p>Includes the costs of maintenance and repair of paved or stabilized streets, roads, walks, driveways, utility service, parking areas, curbs, gutters, signs, and other road appurtenances directly supporting family housing.</p> <p>CAC 7420 Grounds</p> <p>Includes the costs of maintenance, care, and repair of grounds, both improved and unimproved; storm sewers, and drainage structures associated with family housing.</p> <p>CAC 7850 Maintenance and Repair Inspection Program (MARIP)</p> <p>Includes the costs incurred to inspect family housing units, normally on a sampling basis, for the purpose of identifying maintenance and repair deficiencies and development of corrective action.</p> <p>CAC 7860 Family Housing, Service Calls</p> <p>Includes the costs of minor work accomplished in response to service calls including emergency and temporary repairs, normally not in excess of 16 man-hours.</p>		

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<p>Army standards.</p> <p>PF: Number of family units repaired.</p> <p>192212.00 Demolition-General/Flag Officer Quarters</p> <p>Demolition or razing, dismantling, moving, or relocating of buildings, structures, utilities, and surfaced areas, and removal in connection with disposals when not associated with a construction project.</p> <p>PF: Number of demolition projects.</p> <p>192214.00 Repair on Historic Units-General/Flag officer Quarters (GFOQ)</p> <p>All repairs made on units designated under the National Historic Preservation Program. Number of family housing units repaired.</p> <p>192218.00 Repair for Environmental Compliance (GFOQ)</p> <p>Major maintenance and repair to comply with federal, state, or local environmental laws and regulations not covered under DERA funded program costs.</p> <p>192230.00 Major Maintenance and Repair Projects-Family Housing (Excluding GFOQ)</p> <p>Repairs, rehabilitation, (exclusive of any improvement work), and replacement of major components and installed equipment (includes heating systems, water heaters, heat exchangers, and garbage disposals).</p> <p>192231.00 Major Projects-Family Housing (Excluding GFOQ)</p> <p>Repairs, rehabilitation, and/or replacement of major components of a family housing unit or directly related to the unit. Includes work to bring existing components up to current Army standards.</p> <p>PF: Number of family units repaired.</p> <p>192232.00 Demolition (Excluding General/Flag Officer Quarters)</p> <p>Demolition or razing, dismantling, moving, or relocating of buildings, structures, utilities, and surfaced areas, and re-</p>			

Army	Navy	Air Force	Marine Corps
<p>movement in connection with disposals when not associated with a construction project.</p> <p>PF: Number of demolition projects.</p> <p>192234.00 Repair on Historic Units (Excluding GFOQ)</p> <p>All repairs made on units designated under the National Historic Preservation Program. Number of family housing units repaired.</p> <p>PF: Number of family housing units repaired.</p> <p>192238.00 Repair for Environmental Compliance (Excluding GFOQ)</p> <p>Major maintenance and repair to comply with federal, state, or local environmental laws and regulations not covered under DERA funded program costs.</p> <p>192260.00 Major Maintenance and Repair Projects-Mobile Home Spaces and Other Housing Facilities</p> <p>Repairs, rehabilitation, (exclusive of any improvement work), and replacement of major components and installed equipment (includes heating systems, water heaters, heat exchangers, garbage disposals).</p> <p>192261.00 Major Maintenance and Repair Projects-Mobile Home Spaces and Other Housing Facilities</p> <p>Repairs, rehabilitation, and/or replacement of major components of a family housing unit or directly related to the unit. Includes work to bring existing components up to current Army standards.</p> <p>PF: Number of family units repaired.</p> <p>192268.00 Repair for Environmental Compliance (Mobile Homes, Etc.)</p> <p>Major Maintenance and repair to comply with federal, state, or local environmental laws and regulations not covered under DERA funded program costs.</p> <p>192310.00 Alterations and Additions-General/Flag Officer Quarters</p> <p>Additions, expansions, exten-</p>			

Army	Navy	Air Force	Marine Corps
sions, and alterations to existing real property incidental to maintenance and repair. 192311.00 Alterations and Additions-General Flag Officer Quarters Alterations and additions to dwelling units and other real property facilities directly associated with the dwelling unit, such as grounds, driveways, landscaping, patios, carports, or garages, interior sidewalks, fencing, and utility lines from their connections with laterals or transformers of the dwelling unit. PF: Number of dwelling units for which alterations and additions have been accomplished.			
192312.00 Alterations and Additions-General/Flag Officer Quarters (Historic) Alterations and additions to dwelling units designated under the National Historic Preservation Program and other real property facilities directly associated with the dwelling units, such as grounds, driveways, landscaping, patios, carports or garages, interior sidewalks, fencing, and utility. PF: Number of dwelling units for which alterations and additions have been accomplished.			
192330.00 Alterations and Additions-Family Housing (Excluding GFOQ) Additions, expansions, extensions, and alterations to existing real property incidental to maintenance and repair.			
192331.00 Alterations and Additions (Excluding GFOQ) Alterations and additions to the dwelling unit within 5' building line including carports, garages, storage patios and other facilities considered as part of the dwelling unit. Additions, extensions, and expansion of other real property facilities such as roads, parking areas, side walks, play grounds, utilities (distributions systems, lighting).			
192332.00 Alterations and Additions (Excluding GFOQ-Historic)			

Army	Navy	Air Force	Marine Corps
<p>Alterations and additions to the dwelling unit under the National Historic Preservation Program within 5' building line including carports, garages, storage patios and other facilities considered as part of the dwelling unit. Additions, extensions, and expansion of other real property facilities such as roads, parking areas, side walks, play grounds, utilities (distributions systems, lighting).</p> <p>PF: Number of dwelling units for which alterations and additions have been accomplished.</p> <p>192360.00 Alterations and Additions-Mobile Home Spaces and Other Housing Facilities</p> <p>Additions, expansions, extensions, and alterations to existing real property incidental to maintenance and repair.</p> <p>192361.00 Dwelling Units-Mobile Home Spaces and Other Housing Facilities</p> <p>Alterations and additions to dwelling units and other real property facilities directly associated with the dwelling unit, such as grounds, driveways, landscaping, patios, carports, or garages, interior sidewalks, fencing, and utility lines from their connections with laterals or transformers of the dwelling unit.</p> <p>PF: Number of dwelling units for which alterations and additions have been accomplished.</p> <p>192362.00 Administrative Real Property-Mobile Home Spaces and Other Housing Facilities</p> <p>Additions, expansions, extensions, and alterations to administrative real property incidental to maintenance and repair projects.</p> <p>192363.00 Other Real Property- Mobile Home Spaces and Other Housing Facilities</p> <p>Alterations and additions to other real property facilities not included above, such as streets, roads, playgrounds, parking areas, through side-walks, and utility service lines.</p> <p>192410.00 Exterior Utilities (All)</p>			

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Maintenance and repair of electrical, gas, water, sewage, and other utility distribution, collection, and service systems, including street lighting systems, beginning at the five foot line and ending at the point where the utility systems joins a main or terminates. 192432.00 Maintenance and Repair-Exterior Utilities at MHPI Locations Costs incurred after privatization by AFH appropriation for maintenance and repair of electrical, gas, water, sewage, and other utility distribution, collection, and service systems, including street lighting systems. 192488.00 Repair For Environmental Compliance (Exterior Utilities) Exterior utilities repair to comply with federal, state or local governmental laws and regulations not covered under DERA funded program costs. 192532.00 Maintenance and Repair-Other Real Property at MHPI Locations Costs incurred after privatization by AFH appropriation for maintenance and repair of utility systems, grounds, surface areas, and other real property, such as community and service type buildings, fences, and athletic recreational areas directly associated with MHPI units. 192570.00 Other Real Property (Excluding GFOQ) Including Mobile Home and Other HSG Facility Maintenance and repair of utility systems, grounds, surfaced areas, and other real property, such as community and service type buildings, fences, and athletic and recreational areas directly associated with family dwelling units or a family housing area and which are required solely for family housing. 192571.00 Grounds-General Charges Maintenance, care, and repair of improved and unimproved grounds and storm sewage and drainage structures.			
PF: Number of acres main-			

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<p>tained.</p> <p>192572.00 Surfaced Areas-General Charges</p> <p>Maintenance and repair of paved or stabilized streets, roads, walks, driveways, utility service, and parking areas, curbs, gutters, signs, and other road maintenance.</p> <p>PF: K square yards of surfaced areas maintained.</p> <p>192573.00 Other-General Charges</p> <p>Maintenance and repair of facilities other than dwellings, such as fences, athletic and recreation facilities, community buildings, and service facilities associated with family housing.</p> <p>192574.00 Military Housing Rental Guarantee Program</p> <p>Maintenance and repair costs associated with the military housing rental guarantee program, 10 U.S.C. 2836 (Formerly Sec. 802, Rental Guarantee Housing).</p> <p>192578.00 Repair for Environmental Compliance-Other Real Property (General Charges)</p> <p>Other real property repair to comply with federal, state, or local environmental laws and regulations not covered under DERA funded program costs.</p> <p>192580.00 Other Real Property-Excluding GFOQ (Historic)</p> <p>Maintenance and repair of utility systems, grounds, surfaced areas, and other real property, such as community and service type buildings, fences, and athletic and recreational areas directly associated with family dwelling units or a family housing area and which are required solely for family housing that are designated under the National Historic Preservation Program.</p> <p>192581.00 Grounds-Excluding GFOQ (Historic)</p> <p>Maintenance, care, and repair of improved and unimproved grounds and storm sewage and drainage structures of quarters designated under the National Historic Preservation Program.</p>			

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<p>PF: Number of acres maintained.</p> <p>192582.00 Surfaced Areas—Excluding GFOQ (Historic)</p> <p>Maintenance and repair of paved or stabilized streets, roads, walks, driveways, utility service, and parking areas, curbs, gutters, signs, and other road maintenance.</p> <p>PF: K square yards of surfaced areas maintained.</p> <p>192583.00 Other—Excluding GFOQ (Historic)</p> <p>Maintenance and repair of facilities other than dwellings, such as fences, athletic and recreation facilities, community buildings, and service facilities associated with family housing that are designated under the National Historic Preservation Program.</p> <p>192588.00 Repair for Environmental Compliance—Other Real Property (Excluding GFOQ) (Historic)</p> <p>Other real property repair to comply with federal, state, or local environmental laws and regulations not covered under DERA funded program costs for quarters designated under the National Historic Preservation Program.</p> <p>192601.00 Dwellings</p> <p>Acquisition of materials and equipment for use on dwelling units in the occupant self-help program. Cost for the self-help program will not be prorated by housing category.</p> <p>192602.00 Other Real Property</p> <p>Acquisition of materials and equipment for use on other family housing property in the occupant self-help program. Costs for self-help will not be prorated by housing category.</p> <p>192710.00 Design Costs—General/Flag Officer Quarters</p> <p>Design of maintenance and repair projects for general and flag officer quarters.</p> <p>192711.00 Design Costs—General/Flag Officer Quarters (Historic)</p> <p>Design of maintenance and repair projects for general and flag officer quarters design-</p>			

Army	Navy	Air Force	Marine Corps
<p>nated under the National Historic Preservation Program.</p> <p>192720.00 Design Costs- Family Housing (Excluding General/Flag Officer Quarters)</p> <p>Design of maintenance and repair projects for other than general and flag officer quarters.</p> <p>192721.00 Design Costs- (Excluding GFOQ) (Historic)</p> <p>Design of maintenance and repair projects for other than general and flag officer quarters designated under the National Historic Preservation Program.</p>			